ROCKS and MINERALS
PUBLISHED MONTHLY

Edited and Published by
PETER ZODAC

May - June
1949

Contents for May-June, 1949

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The official Journal of the Rocks and Minerals Association

CHIPS FROM THE QUARRY

COMING EVENTS

Annual Federation Convention

California and American Federation of Mineralogical Societies.

June 24-26, 1949

Machinery Bldg., Calif. State Fair Grounds, Sacramento, Calif.

Leo G. Chaussee,
Chairman Publicity and Advertising,
3461 - 2nd Ave.,
Sacramento, Calif.

GEM VILLAGE ROCK SHOW

(Bayfield, Colo.)
July 4th, 1949

A full program is planned with various activities and every effort is being put forth to make this the best show yet.

Only one day but that day packed with everything interesting for the hobbiest.

Display space free — no matter whether you have things to sell — trade or show. Gems—gem materials — jewelry — specimens — cutting equipment — fluorescents — books — antiques and hobbies of all kinds. An auction will be held after the show for the benefit of the GEM VILLAGE ROCK CLUB. Refreshments will be served. Visitors will be expected to make a few remarks.

6th ANNUAL SHOW

San Fernando Valley Mineral & Gem Society, Inc., whose membership is over 160 members, are busy making final plans for their 6th Annual Show, which will be held Saturday, June 11th, from 1 P.M. to 10 P.M. and Sunday, June 12, 1949 from 10 A.M. to 9 P.M. at North Hollywood Recreation Center, Cor. Tujunga Ave., and Chandler Blvd., North Hollywood, California. Display will consist of Minerals, Gems, Jewelry, Fossils, Fluorescents, and Demonstration of the Lapidary Art. Admission Free — Door Prizes.

Agatha W. Lynn,
Publicity Director.

CONVENTION COMMENTS

June 24-26, 1949
(Sacramento, Calif.)

49 now has added significance. With the addition of the six new Societies the California Federation will be represented by 49 Societies at the big '49 convention, making it 49 for '49.

Hotel Sacramento has been chosen as the convention headquarters for the dates, June 24, 25, and 26. Official registration will begin at 5 o'clock P. M., June 23.

There will be a conducted bus tour of Sacramento. You will be shown the Capitol buildings, Sutter's Fort, Crocker Art Gallery, the Pony Express building, and many other places of historic interest. In short, you will see Sacramento, old and new.

Another reminder! Do not forget your swapping material. The big, free swapping area will be in a prominent place near the auction area. It will be adequately manned and furnished. All that is needed to insure its success is plenty of swapping material.

Plans have been completed for a gold panning contest. Here are the general rules. One member chosen from each individual society will compete. Contestant must be dressed in garb appropriate to the occasion, or to the centennial theme. This garb may consist of old time dress, miner's dress, Levis and gay colored shirts, or any dress that will enable contestant to look the part. Contestant must furnish his or her own gold pan.

Ultra Violet Products Inc., the Mineralight people, will exhibit their extensive fluorescent mineral collection. This display is undoubtedly one of the most spectacular in America. Several private collectors have signified that they intend to display. This should be a treat for all of you, and especially those of you interested in fluorescent minerals.

Parcels of California minerals are being assembled by the Mineralogical Society of Southern California for out of state visitors to the convention. If you have a surplus of California materials and wish to cooperate in this friendly gesture, send them to Jack Streeter, or to one of the officers of the Mineralogical Society of Southern California. If enough material can be obtained, there might be a souvenir for everyone.

REMEMBER—Sacramento in '49.

Leo G. Chaussee, Chairman
Publicity and Advertising

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CARNEGIE MUSEUM-PENNSYLVANIA STATE COLLEGE EXPEDITION TO COLORADO (1948)

By DAVID M. SEAMAN
Associate Curator of Mineralogy, Carnegie Museum, Pittsburgh, Pa.

Mr. Howard K. Lucas, the curator of the mineralogical museum of the Pennsylvania State College, State College, Pennsylvania, accompanied me to Colorado to attend the First National Convention of the American Federation of Mineralogical Societies held in Denver from June 13th through 16th, 1948, at the termination of which we made an extensive mineral collecting trip in central and south-central Colorado collecting from some thirty-five mineral localities, in a period of two weeks. The collecting trip was well planned from noting the many localities in Colorado which have appeared from time to time in *Rocks and Minerals* and from the writer's knowledge during two years of study and collecting in Colorado while a student at the University of Colorado from 1932 to 1934. We knew beforehand just what minerals might be available at each locality and in most instances I could go directly to the locality without asking any directions which was a time saver, and made possible such extensive collecting in such a short time. I have known Mr. Lucas as a personal friend for a number of years and so we thoroughly enjoyed each others company and had a grand time together with our common interest of minerals. The following is an account of our trip which may lead others to enjoy the thrill of collecting in the great mineralized and scenic state of Colorado, by making such a trip themselves.

Mon. June 7th

We left Pittsburgh with intermittent rain and drove to Vandalia, Ohio, some 260 miles, stopping near evening at Taylorsville Dam about 20 miles west of Springfield, Ohio, along U. S. Route 40, to collect invertebrate fossils from strata of the Whitewater (Ordovician) which outcrop along both sides of the Little Miami River. We are interested in all earth sciences so had determined to make our trip out and back as enjoyable as possible by stopping at all interesting rock outcrops to see what we might find. We secured some interesting fossils here of brachiopods, cup corals, cephalopods, gastropods, etc. as these layers are very rich in fossil invertebrate life.

Tues. June 8th

We drove to Hannibal, Missouri, a distance of 410 miles, but found very few rock outcrops. We collected chert nodules along the highway near Groveton, Indiana, at which locality a few poorly preserved fossils were seen in sandstone. Near evening we had better luck in deep road cuts, cutting through thick limestone strata near Florence, Illinois. Here we obtained invertebrate fossils, chiefly brachiopods of Mississippian age, and our first mineral specimens of the trip, quartz geodes lined with small quartz crystals with some of the fossils being veritable geodes themselves with hollow interiors lined with small quartz crystals. Good calcite crystals were also found here.

Wed. June 9th

Drove from Hannibal, Missouri, to Bellville, Kansas, some 360 miles. The day was hot and clear. We collected invertebrate fossils from an extensive outcrop of Pennsylvania limestone which occurs in a gully which can be seen from the highway but which may be easily missed in traveling west along U. S. Route 36. This outcrop is about 2½ miles east of junction 33 along U. S. Route 36 near Osborn, Missouri, and supplies many excellent brachiopods. About 1½ miles east of Haworth, Kansas, along U. S. Route 36, we collected Cretaceous clam shells, from outcropping sandstones.

Thurs. June 10th

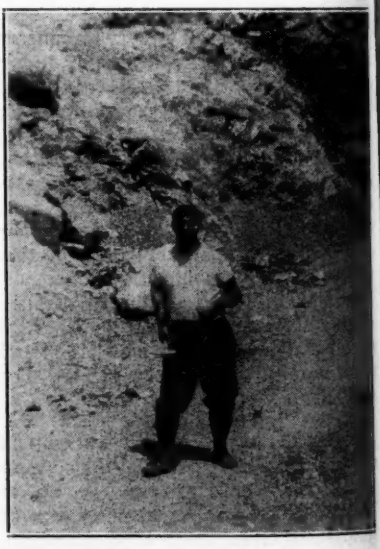
Drove from Belville, Kansas, to Denver, Colorado, a distance of 410 miles, with very little of geological interest other than the scenery. Stayed in a tourist camp overnight as we did every night except the few days we were at the convention in Denver.

Fri. June 11th

With two days to spare before the convention began, we visited *North Table Mountain at Golden, Colorado,* an old locality which still provides excellent zeolite minerals for those willing to work for them. A heavy sledge hammer would be of great use at this locality in breaking open amygdaloidal, tough, basalt to expose the interesting mineral-lined cavities. However we obtained some interesting specimens with a geologist's hammer as there are many smaller blocks of basalt lying scattered about the quarry floor or at the foot of the basalt cliffs where they have fallen due to a weathering away of the basalt. These flat-topped, basalt, table mountains both North and South Table Mountains, rise some 600 feet above the town of Golden, the home of the Colorado School of Mines which houses an excellent mineral museum with beautiful aluminum display cases. The best zeolite locality is found in an old quarry about half-way up the south side of North Table Mountain. This may be reached from the highway going from Golden to Arvada about a mile east of Golden where the car may be parked on an old abandoned part of the highway, and the rest of the distance to the quarry being climbed upward after first crossing a drainage ditch over a wooden plank. This climb is an arduous one, for Golden is at an elevation of over 5,000 feet. Many basalt boulders are scattered all over the mountain side and make climbing over and around them quite a task but when one reaches the quarry he is well repaid for his efforts. We left the quarry with excellent specimens of analcite in ¾ inch trapezohedrons, natrolite, mesolite, thomsonite, chabazite, small stilbites, etc. Analcite and chabazite are the most common minerals in the basalt and are everywhere and easily collected.

We visited a second locality on the west side of North Table Mountain by a road which may be travelled clear to the top of the mountain. When we were there, we left the car below as the gates were locked, and followed the road to near the top where an area of fallen blocks may be noted to the south. We left the road and hiked over to this area a couple of hundred yards, and found some interesting analcite, chabazite, and plentiful apophyllite crystals of long prismatic habit. No apophyllite was seen in the first quarry. A photo of the author descending the old road from North Table Mountain appears in this article.

We also drove to the top of Lookout Mountain at Golden to see Buffalo Bill's grave and from which may be seen the Table Mountains far below us (from which we collected our zeolites) and a wide expanse of the plains east of Denver. We visited the museum of the Colorado School of Mines where there is a very fine mineral collection among which are some outstanding minerals from Brazil, a gift of Allan Caplan, a former student of the Colorado School of Mines and the



David M. Seaman, June 11, 1948, North Table Mt., Golden, Colorado.

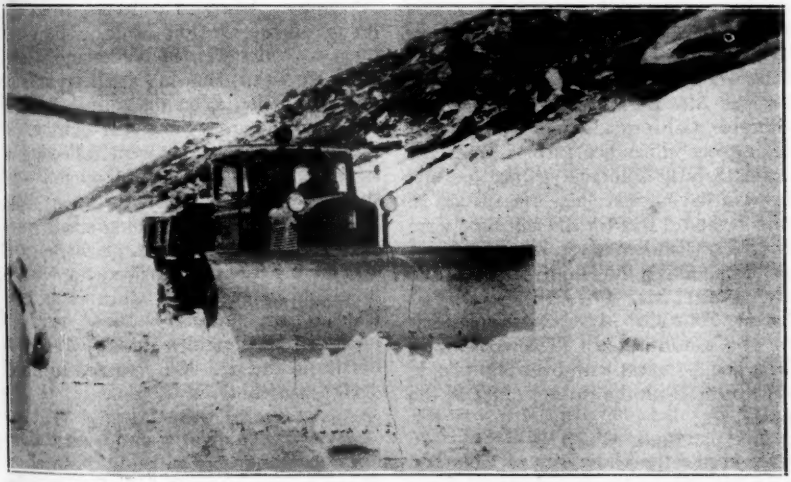
University of Colorado and with whom I spent two weeks collecting at Creede, Colorado, in June 1934 when I was working on my master's degree. Among Caplan's minerals are a large nearly transparent, doubly terminated smoky quartz crystal about 2x2x2½ feet; several large blue topaz crystals and cleavages, the largest about 8x12x6 inches; rubellite tourmalines to 1x2 inches in a quartz crystal of 3x5 inches, and green, gem tourmalines to ⅓x3 in a smoky quartz crystal of 6x10 inches. Other outstanding specimens seen in this collection are a lamellar mass of nearly solid molybdenite from Little Cottonwood Canyon near Salt Lake City, Utah, about 1x1½ feet; a 6x8 inch group of amazonstone crystals from Florissant, Colorado; a group of pyrite pyritohedrons 8x10 inches with crystals to 5 inches from Leadville, Colorado; and a mass of rose quartz of 1x3 feet from Custer County, South Dakota.

Sat. June 12th

Collected from an old pegmatite locality at Drew Hill up Golden Gate Canyon on the way to Black Hawk and Central City which may be seen by its large dump high on a hill on the left hand side of the road about 8 miles northwest of Golden, Colorado, going towards Black Hawk. In 1934 (see *Rocks and Minerals* for May, 1935, Page 71) I found an interesting crystal of chrysoberyl at this locality and in 1936 Richard V. Gaines of the Colorado School of Mines found a large number of chrysoberyl crystals the largest of which reached 5 inches in diameter. We thought we would give this locality a search but we found very little of interest; no chrysoberyl crystals this time, only the usual quartz, feldspar, mica, black tourmaline, and some poor andradite garnets near the contact of the pegmatite and schist. The students from Golden must have given it a thorough going over in the meantime.

From a number of old mine dumps near Central City and Black Hawk which may be seen along this highway we obtained interesting ore specimens of galena, sphalerite, pyrite, chalcopyrite, and quartz some of the minerals being in fair crystals.

We decided to drive up Mt. Evans which was only a short distance away from Idaho Springs, about 18 miles, but we were only able to reach the shelter house at Summit Lake at 12,740 feet in elevation; the top of the mountain being 14,260 feet. We had difficulty in even reaching this point, once having to stop for the snow plow, (See photograph of



On slopes of Mt. Evans, Colorado, about 12,000 feet high.

snow plow on Mt. Evans). We ate the lunch we had brought with us at Summit Lake and got out and climbed around in the snow awhile. The entire road from this point to the top of the mountain was snowed in. I was interested in trying out the car radio to see what the reception would be like at that altitude and was surprised, for it came in perfectly. The atmosphere was clear and crisp at that altitude. Returned to Denver that night.

June 13th Through 16th

The Denver mineral convention was very interesting and we renewed many old acquaintances and made many new ones. Mr. Lucas spent much time at the booth of his old friend, Frank Morse of Bayfield, Colorado. I met many people for the first time with whom I have made a number of good mineral exchanges or with whom I have corresponded over a number of years as Richard M. Pearl; E. M. Gunnell; Alfred M. Buranek of Salt Lake City, Utah; Mrs Marie Kennedy of Oklahoma; Dr. Dake of *The Mineralogist Magazine;* Mr. and Mrs. W. L. Roberts of Rapid City, South Dakota, and many others. A number of my good friends were there as A. N. Goddard of Detroit, Michigan, the Schortmann brothers of Easthampton, Massachusetts, and their wives, who had a very fine selection of choice minerals from all over the world for sale. An up and coming dealer who had a fine selection of minerals also was Mr. Burnham of Burminco of Monrovia, California, whom we later met digging out almandite garnets from the famous Salida, Colorado, garnet locality. He was having excellent success at it. Others whom I met for the first time were Mrs. Vera Landon of Seattle, Washington; Mrs. Olivia McHugh of Salt Lake City, Utah; Mr. Chester Howard of Denver, Colorado; Mr. and Mrs. Pendelton of California, etc. The convention was a grand success with over 600 people at the banquet on the closing night of the 16th.

Thurs. June 17th

We visited the University of Colorado at Boulder where I renewed many of my university acquaintances as Miss Virginia Holbert, the geology librarian; Dr. R. D. Crawford and Dr. George, my former professors, now retired, Dr. Ernest Wahlstrom, Dr. P. G. Worcester and others. I noted many new changes and a number of new faces since this was my first visit in 12 years. Part of the day was spent exchanging minerals with Mr. J. T. Byron of Boulder, a mining engineer, from whom I obtained some native gold from Idaho Springs, and some native silver from Ward, Colorado. I always carry along exchange specimens with me as it is an excellent way in which to get acquainted with collectors. While in Denver I made some excellent exchanges of minerals with the Colorado Bureau of Mines Museum through an old university acquaintance of mine, Mrs. Ethel McCarthy, the secretary to Mr. Fred Jones, the Commissioner of Mines of Colorado. Theirs is an excellent mineral museum with some 11,000 specimens on exhibition with the main exhibit being the minerals found in every county of Colorado. Stayed in Boulder over night.

Fri. June 18th

We collected at a small working tungsten mill near Sugar Loaf, west of Boulder, and obtained some tungsten concentrates from Boulder County, Colorado, and some scheelite concentrates from Wyoming. We also collected from the dump of the Oregon Mine, a tungsten mine six miles west of Nederland, Colorado, specimens showing small crystals of galena, sphalerite, quartz, purple fluorite, and ferberite in a brecciated granite.

In the afternoon we went collecting at an active silver mine at Caribou and were successful in breaking off specimens from a large piece of ore showing small wires and plates of native silver, galena, quartz, sphalerite pyrite, and chalcopyrite. It was very cold at the mine which is at least 10,000 feet elevation. Snow was still lying on the ground in places with snow flurries in the air. We returned to Boulder that evening.

Sat. June 19th

We left Boulder for our main collecting trip, our first stop being at an abandoned gold mine at Gold Hill, Colorado, where typical gossan of limonite and

quartz is the gold-bearing rock. A few specimens were obtained and a single flake of free gold was seen, but was lost from the specimen of gossan.

Our second stop was at the White Raven Mine at Ward, a notable native silver locality. We met rain and sleet here and while we found no native silver we did find good specimens showing small crystals of galena, sphalerite, brown siderite and white barite. This was very rough country we were in and we had two flat tires before we got out of it, all gravel and crushed rock surfacing the roads.

After leaving Ward we drove to Estes Park and on through Rocky Mountain National Park to Kremmling for the night. The weather was blustery and rainy but the worst was yet to come. On the top of Fall River Pass, over 11,000 feet high, we ran into a hard snowstorm and it was difficult to keep our footing when we got out of the car at the shelter house because the wind was coming in such great gusts. The snow did not stick to the roads but several times we had to get out of the car to wipe it off the windshield. As we descended the other side of the pass we met rain and at several thousand feet lower we ran into sunshine the first we had seen that day and which remained with us to Kremmling.

Sun. June 20th

The weather was warm and clear as we drove 16 miles south from Kremmling to the Big Four Mine which is located in a large black limestone cliff about one hundred feet above the road. The mine entrance may be reached by climbing up ladders to the track level which borders the face of the cliff for about a hundred yards ending at a cabin perched on the face of the cliff. Along this level some excellent greenish yellow, partly transparent sphalerite crystals of interesting twinning were found nearly an inch in size and having a cubic aspect. This mine has been the chief zinc producer in Colorado in recent years and excellent crystals to two inches along an edge have been obtained here. Some pyritohedral pyrite was found in the debris at the foot of the cliff near where we parked our car. As is so often the case with western mines, the locality is given as the nearest town which in this case is Kremmling some 16 miles away.

After an hour or so here we drove on to Breckenridge, a locality famous for the plates and sheets of native gold which were obtained in the early days of this active gold camp. We hunted up the Wellington Mine, a working mine, and as it was Sunday we had the dumps to ourselves. Here excellently crystalled pyrite, sphalerite, and galena were in profusion.

From a mine dump along the road near Kokomo we obtained some nice specimens of foliated molybdenite in chalcopyrite. At the Climax molybdenite mine we got specimens of the usual brecciated granite showing small veinlets of massive molybdenite, pyrite, and a little purple fluorite. The dumps of the various mines near Leadville which locality has produced magnificent pyrite are mostly badly weathered and very little was obtained from them, only a few pyrite crystals.

We reached Buena Vista by nightfall.

Mon. June 21st

We spent a great deal of the morning trying to find a pegmatite locality near Buena Vista but had to give it up as a bad job. This was one of the localities with which I was unfamiliar. We were successful in finding the Luella Pegmatite south of Buena Vista and northeast of the junction of U. S. 284 about a mile east along U. S. Route 24, for it could be seen high in a ridge south of the highway. It was a hard climb down a gully, across a trickling stream of water which in time of flood might become a raging torrent, and then a stiff climb upwards to the quarry. Once at the quarry we noticed much rose quartz in evidence with several bold outcrops in the unworked portions of the quarry. Much shattered crystals of allanite were quite common in the blocks of feldspar, but could not be extracted, falling to pieces when removed. The most interesting specimens obtained by us here were of masses of euxenite to a half inch or larger firmly imbedded in

microcline. Other minerals seen here but not collected were muscovite, biotite, hematite stains, limonite and quartz.

In the afternoon we visited the famous Ruby Mountain at Nathrop, a few miles south of Buena Vista, a locality which has always been very interesting to me. It is necessary to cross the Arkansas river to get to the locality, a whitish rhyolite lava flow which may be seen from the highway, U. S. 284, for quite some distance before one gets to it. If one watches carefully as he proceeds southward from Buena Vista, he will see about a mile north of this rhyolite mountain on his left a wooden bridge over which passes the railroad on its way to Salida. A turnoff may be made through a field and a car can be driven along a faint road to a point very near this bridge, from which the bridge may be crossed with caution and then one can proceed directly to the mountain by cutting across the fields and following the east bank of the river. Arriving at the locality he will find a large amount of blocks of rhyolite in the talus at the foot of the rhyolite cliffs. It is these blocks of rhyolite which are of interest for in the cavaties or lithophysae are to be found the small colorless and amber-colored topaz crystals, tiny quartz crystals, and the red, gem, spessartite garnets which make this mountain so interesting. The topaz crystals in general are smaller than a quarter of an inch while the spessartite garnets range from about an eighth of an inch to a quarter of an inch in size though a few three-quarter inch crystals have been found. At the time we were there much evidence of recent work upon these fallen blocks of rhyolite was present, as just a few days before, the group from the Denver convention had been there. We found a number of interesting specimens of both the red, trapezohedral, half crystals of spessartite garnets and the small topaz crystals. The best garnet I found was nearly a half inch across and was the best I ever found at the locality in four trips. This was undoubtedly the result of those from the Denver convention for it was in plain sight and was a small specimen about 3 x 3 inches in size lying near a freshly broken block of rhyolite. The flow structure of the rhyolite makes the rhyolite an interesting specimen in itself. Some of the rhyolite contains tiny black grains of black obsidian, while a pearlite deposit is close by from which interesting specimens may also be obtained with little effort. One has to pass by the pearlite deposit to get to the rhyolite mountain. Interesting volcanic ash deposits, eroded to fantastic shapes, are passed by on the way to the locality also where a conglomeration of various igneous rocks may be seen imbedded in the ash making it look much like an ordinary conglomerate.

We returned to Buena Vista for the night.

Tues. June 22nd

We drove south from Buena Vista to the Sedalia Mine which may be seen high in the ridge on the east side of the road about 3 miles north of Salida. It is possible to drive right to the foot of the mine, which actually consists of a number of huge open cuts at three different elevations in the mountain, by crossing the railroad tracks to your left as you go south from Buena Vista or on your right as you proceed north from Salida going into a farm from which permission to drive the road may be obtained if one is careful to close the gates behind him so the cattle don't get out. I believe there are three gates. It is about 1½ miles from this farm to the mine and much needless hiking may be avoided if this farm is found which may be needed at the locality itself.

The best garnets are obtained from a small outcropping of mica schist near the top and on the south side of the uppermost open cut or to your right as you climb the mountain. You go up about a thousand feet, so take your time, the garnets will still be there when you get there. A short time after we arrived, a car pulled in at the foot of the mountain and we saw a man get out and come up that mountain like he meant business, which in truth he did, for he had found an excellent outcropping of the garnets

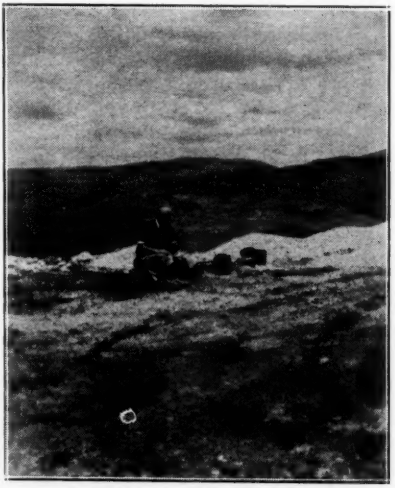
in a small area about six feet square the night before and didn't want anyone to beat him to it. It was Mr. Burnham of Burminco and we later visited him at his workings and through his kindness got a few excellent garnets from them ourselves. We had found only a few broken specimens previously. Near the top of this same cut we found some interesting drusy quartz crystals and much gneiss stained by chrysocolla and aurichalcite. Small magnetite crystals in mica schist were collected together with smaller garnets at one place on the mountain. The garnets Mr. Burnham dug were the large dodecahedrons for which the locality is noted and they ranged up to nearly three inches in diameter. The view from the top of this mountain was grand even if we had not found a single garnet. About two o'clock in the afternoon we bid goodbye and good collecting to our friend and were on our way again to Gunnison for the night. We drove through a snowstorm on Monarch Pass on our way to Gunnison at an elevation of 11,302 feet. It was raining so hard when we came down off the pass that we drove to Gunnison, though I had wanted to collect at Ohio City first before calling it a day. However our wait was fully justified for the next day was a beautiful, bright, clear one.

Wed. June 23rd

We drove to Ohio City and stopped at a farmhouse along the right hand side of the road from which we could see the rough dirt mine road leading off and up to the mine which could be seen high on the mountain before us. We were readily granted permission to collect from the mine though the farmers through whose property the mine road runs are not the owners. This farm is actually a few miles south of Ohio City. The owner of the mine is a Mrs. Disberger of Ohio City.

We drove up this road for about two miles directly to the mine dump which saved us much hiking. I had formerly hiked in from another farm along the ridge itself for about four miles. The Brown Derby Mine (see photographs) is located in three parallel pegmatite dikes each about eleven feet in thickness. A number of openings have been made in them and the locality was worked during the recent war for microlite which occurs as tiny grains thickly disseminated through granular lepidolite. There is evidence in a large pile of rough. opaque, topaz crystals at the mine that it was hoped that the topaz might also be used, probably as an abrasive. This is Colorado's most noted lithium pegmatite locality and was a must on our list of localities as I am particularly interested in the pegmatite minerals of the United States and hope to have a book out on them early next year.

We collected many interesting specimens here as well as examining the openings in these dikes in some detail. We ate lunch at the mine and after about four hours here were satisfied with our days collecting. Among the specimens found were parts of opaque topaz crystals nearly a foot in size with smaller ones in the matrix; large single crystals of lepidolite to four inches; massive granular lepidolite; fluorite, cleavelandite; microcline; muscovite; pink, translucent, parts of beryl crystals; biotite; microlite



Howard Lucas, Brown Derby Mine, Ohio City, Colorado.

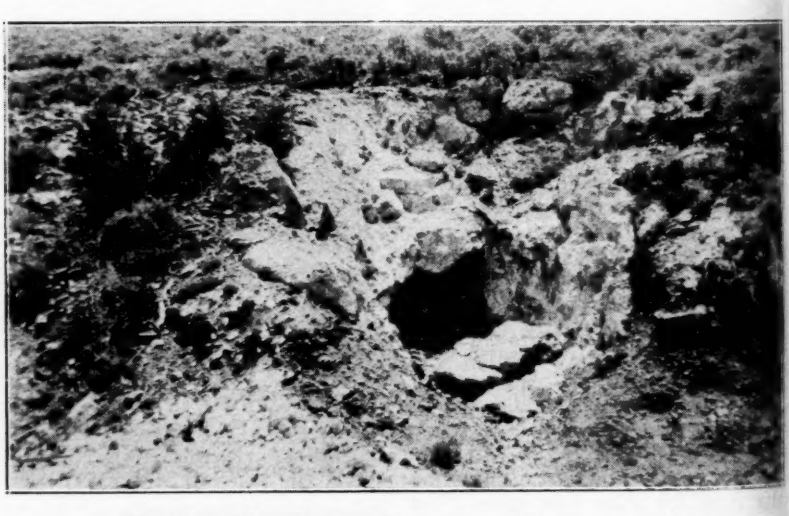
crystals; massive quartz; large rubellite tourmaline crystals; large pink and green tourmaline crystals to 1½ x 5 inches; columbite; samarskite; and green tourmaline crystals. None of the minerals are of the gem quality but all are very colorful specimens. To me the lithium pegmatites are the most interesting of all mineral localities and I was well repaid in waiting for good weather at this deposit.

We drove south to Lake City for the night in the heart of a silver mining region where we had a large cabin with four large rooms, a real old fashioned one and not the modern cabin of today. We had to draw our drinking water from a well and there were no modern conveniences which doesn't bother me in the least. Just to be out in God's country once in a while looking for minerals is all I ask out of life.

Thurs. June 24th

We collected from the Ute and Ulay mine high up on one of the neighboring mountains at Lake City. This was a real climb with the elevation at the mine of more than 10,000 feet. From the dumps of this mine we secured typical specimens of ore showing the following minerals: tetrahedrite (high in silver), chalcopyrite, galena, sphalerite, barite, and druse of quartz crystals.

In the afternoon we drove ove Slumgullion Pass, 11,361 feet amid beautiful mountain scenery on our wa to Creede. At Creede we were interested in collecting especially from the dump of the old Amethyst Mine where I knew we might find some native silver and especially amethyst crystals lining the veins and vugs of the ore. We collected some interesting amethyst groups showing in association banded agate, green fluorite, sphalerite, galena, pyrite, chalcopyrite, and thuringite. Creede was one of Colorado's famous silver camps in the 1890's and much interesting material may still be collected from its old dumps with a little effort as Creede is over 8,000 feet in elevation. On the northwestern edge of the town are located the Creede beds of volcanic ash which contain numerous well preserved fossil insects as well as fossil plants. These are quite similar to those found at Florissant but the strata are about a thousand feet higher in elevation. Pine cones are much more numerous here than at Florissant. We did a little collecting but devoted most of our available time to minerals. We



Opening in Pegmatite Brown Derby Mine, Ohio City, Colorado.

drove to Del Norte for the night. Lake City and Creede are out of the way places and may only be reached over real mountain gravel and dirt roads. Wagon Wheel Gap with its fluorite mine (near Creede) yields many colored fluorites and white barite crystals.

Fri. June 25th

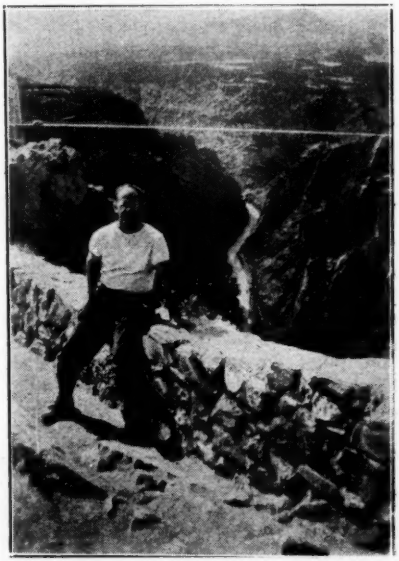
We drove from Del Norte to Canon City stopping along the highway to collect black, terminated tourmaline crystals, muscovite, biotite, microcline and quartz from numerous pegmatite outcrops near Parkdale.

Near Canon City we drove over to see the Royal Gorge going down to the gorge by incline, which in itself is quite a thrill as the incline is 1500 feet long and goes down a vertical distance of over 1000 feet. The view from the bottom of the gorge upwards to the hanging bridge over which we drove, 1053 feet above us, was a memorable experience. Numerous pegmatite outcrops could be distinguished in the walls of the gorge where they cut through the granite, gneisses and schists with many of them being seen in our descent to the bottom of the gorge in the incline car.

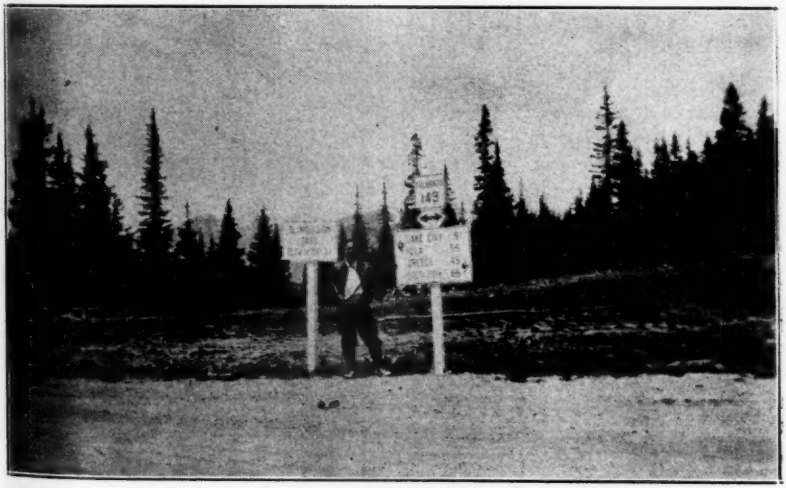
We stayed over night at one of the several tourist camps at Canon City.

Sat. June 26th

The day was fair and warm and we picked up Mr. F. C. Kessler of the Canon City Geology Club whom I had contacted before I left Pittsburgh, and we drove



Royal Gorge, Colorado, June 25, 1948 David M. Seaman in foreground.



Slumgullion Pass between Lake City and Creede, Colorado, June 24, 1948.

to Mica Hill about two miles from the Royal Gorge where we collected, microcline, muscovite, biotite, quartz, small apatite crystals, black tourmaline crystals, good beryl crystals and small almandite garnet crystals. The beryls were numerous in one place in the quarry (see Mr. Kessler cutting out some of them with a chisel). However the dumps which are large were much more lucrative I got one excellent beryl crystal two inches in diameter and seven inches long in a block of feldspar about a foot square. Only the cross section of the beryl crystal was showing, but a sharp blow with my geologist's hammer, split the block square in two along the length of the beryl crystal. This was the best find of the day and one of the best of the entire trip. Many feldspar quarries are in this vicinity and other interesting minerals besides those which we found are known to occur in them as columbite crystals, and monazite crystals. We spent the day looking over a number of these quarries and found most of the minerals which we already had collected at Mica Hill, but no good beryl crystals. In the evening I gave a lecture on Pegmatites before about fifty members of the Canon City Geology Club.

Sun. June 27th

We drove from Canon City through Victor and Cripple Creek, the most famous region in Colorado for gold telluride minerals, and on to Florissant for the night. We collected at the Elkton Mine at Victor and the Independence at Cripple Creek whose ores are similar. Since it was Sunday, the caretaker at the Independence mine allowed us free reign of the dumps and also the picking room of the mill. Good specimens of ore showing tiny purple crystals of fluorite with bladed calaverite and pyrite crystals were collected. Also got some very interesting

Pegmatite at Mica Hill near Royal Gorge, Colorado, June 26, 1948.

Mr. F. C. Kessler of Canon City, Colorado, digging beryl crystals from pegmatite, Mica Hill near Royal Gorge, Colorado.

modified octahedral pyrite crystals in the dump.

Arriving at Florissant, and inquiring for a cabin, I learned that my good friend, Dr. Paul Stewart, the president of Waynesburg College, Waynesburg, Pennsylvania, and his assistant, had arrived the evening before and were in their cabin. We lost no time in looking them up and they took us to a couple of Dr. Stewart's amazonstone diggings near Florissant, the most famous of Colorado's amazonstone localities. We secured a number of good crystals as well as several good, small smoky quartz crystals. Some of the amazonstone were secured in fair groups of crystals. In the evening we all had dinner together and spent an enjoyable time at Dr. Stewart's cabin. Dr. Stewart has been interested in these amazonstone crystals for a long time and has spent a number of summers at Florissant and of course has secured some fine material.

Mon. June 28th

It hailed during the night but the sun was out in all its brightness the next morning when along with Dr. Stewart we drove over to the main Florissant fossil exposures and Petrified Forest (see photograph of Mr. Lucas in the cut.) Arriving at the locality much hail was in evidence. Many interesting fossils have been taken from these volcanic ash beds of Eocene age particularly butterflies, and fish remains. We found a few plant fossils but it will take a bulldozer to expose these beds properly as there is about 15 to 30 feet of overburden which must first be removed to get at them effeciently. We collected at a much more favorable outcropping along the highway just a few hundred feet east of the cabins, (the only ones) at Florissant and got numerous plant fossils and many crane flies.

We drove on to Colorado Springs where we did some sight-seeing visiting The Garden of The Gods, Seven Falls, the Zoo, and Will Rogers Shrine, all very much worth while. Stayed at a tourist cabin in Colorado Springs over night.

Tues. June 29th

We visited Richard Pearl at Colorado College in Colorado Springs and then drove on to Golden for the night.

Wed. June 30th

Drove to Boulder where I said goodbye to my University of Colorado friends and then left for Pittsburgh.

Howard Lucas at fossil insect and plant locality, Florissant, Colorado.

The return home was uneventful except for a day in Chicago at the Natural History Museum where we saw their fine mineral collection among which a block of lazurite about 10 x 16 x 24 inches from an Inca Grave of Peru; a rose quartz bowl 10 inches in diameter and 6 inches deep from the Black Hills of South Dakota, a ¾ inch spessartite garnet on rhyolite from Nathrop, Colorado; a quartz crystal ball of eight inch diameter from Mt. Antero, Colorado; a group of one inch rhodochrosite crystals of 3 x 4 inches from the Sweet Home mine at Alma, Colorado; and a 1 x 2½ inch topaz crystal in matrix 3"x4" from North Chatham, New Hampshire; were the most interesting to me.

Plan to make a trip to Colorado yourself and I am sure you will be more than pleased with the results. Our main collecting trip in Colorado covered some one thousand miles, in ten days.

A TRIP THROUGH PENNSYLVANIA

During the last 8 days of April, 1949, the Editor of *Rocks and Minerals* was away on a field trip with Mr. and Mrs. Howard Hamilton, of Vandergrift, Penn. He flew to Pittsburgh where the Hamiltons were awaiting him and with whom he spent the first night at their home. Early the next morning the three started off on what turned out to be a most interesting trip.

Before leaving on the trip, the Hamiltons made a rash statement. They were going to show the Editor an honest-to-goodness Pennsylvania deer, an animal which the Editor never saw in their state. We headed northward to take in the counties of Warren, McKean, Potter, Elk., etc., where deer were so common, if one were to believe the Hamiltons, that they actually tie up traffic.

Our route took us through most beautiful country which included the Grand Canyon of Pennsylvania, a deep gorge near Wellsboro. We visited sandstone, limestone, and slate quarries, an old lead mine, the huge anthracite coal mines around Hazleton, collected at many rock outcrops, and stopped at a number of colleges to inspect their mineral collections.

The most outstanding specimens collected were brown, banded quartzite which were common as loose masses along the southern edge of the road (Penn. 44, about 3 miles west of Oval, Lycoming Co., Penn.). This is about the finest quartzite the Editor ever saw from anywhere. The ferry ride across the milewide Susquehanna River, via the small antique ferry which accommodates only four cars, and the trip down into a working slate quarry at Pen Argyl, will long be remembered.

We saw many animals and birds in Pennsylvania but never caught sight of a single deer. Travelling 738 miles before we finally crossed over the Delaware River into New Jersey. The very next day, while collecting in Bear Mountain Park, a noted area near Peekskill, N. Y. (just a few miles northeast of the New Jersey line) three deer made their appearance. They were very tame and walked towards the collectors. Were the Hamiltons taken aback? Did they try to look away or not to notice them? Not on your life. They looked the deer over carefully and then Howard remarked casually: "Is that all how big the deer are in New York? You should see the size of the ones we have in Pennsylvania."

"In Pennsylvania!" the Editor retorted, "why you haven't a deer in the whole state except two-legged ones. If any deer are to be seen in Pennsylvania they are the ones which have crossed over the line by mistake and discovering their error they turn around and dash back into New York and safety."

The trip produced such a large number of interesting specimens that someday it may be written up and printed in *Rocks and Minerals*. The trip has one sad feature—the Editor lost his Estwing hammer somewheres in Pennsylvania!

SOME TOURMALINE NOTES

By MAJOR GENERAL JULIAN S. HATCHER
Washington, D. C.

"The Field Book of Common Rocks and Minerals," by Loomis, states that the vogue of Tourmaline as a gem increased greatly after it was found on Mount Mica, near Paris, Maine, and gives some interesting historical facts regarding that famous locality. The frontispiece of that book shows two superb crystals of gem tourmaline growing on albite crystals in a cavity in granite from Mount Mica. Kunz, in his "Gems and Precious Stones of North America", devotes much space to Mount Mica, and credits it with having produced specimens that rival any in the world. Other references in the literature are numerous. ..In spite of the fact that much larger quantities of the gem have come out of such places as Madagascar, Brazil, etc., Mount Mica is perhaps the most famous tourmaline locality in the world.

One can imagine, therefore, our pleasure when one day last summer a letter arrived from the owner, Mr. Howard M. Irish, of Buckfield, Maine, in which he stated that he had read in a magazine of my interest in minerals and gem cutting and would like to have us visit him and go over the old mine dumps.

It wasn't very long before my wife and I were in the car and on the way to Maine, where we were given a warm and royal welcome by the Irish family, who live on a large farm near Buckfield, a village not far from Paris. When we drove up to the farm we at once became conscious of a number of excellent omens in the shape of large flakes and sheets of mica, fragments of graphic granite, and pieces of rose quartz scattered around in the driveway and elsewhere.

We had pictured Mount Mica as one of those enormous granite mountains which abound in this rugged and scenic part of the world, and we were prepared for a rough hike of it to reach the mine. In this we were agreeably disappointed, for in this country of real mountains we found that the so-called Mount Mica was in reality nothing more than a small hill, a spur or buttress-like foothill of Streaked Mountain. It is only about a mile east of the Paris courthouse. As Augustus Choate Hamlin says in his book THE HISTORY OF MOUNT MICA,* "This little hill, with its great gray piles of broken rocks, which have been torn from the surface by the explorations of more than half a century, disfiguring its natural beauty, is the famous Mount Mica, known to every mineralogist of note in the scientific world, and dear to every heart that loves and respects the mysterious in nature's works . . .".

We gleaned many interesting facts about the mine from this old book, written so many years ago by the son of the original discoverer. Most of this material we had already seen, in one form or another, in various later books, but here it seemed much fresher and more authentic. For instance, there is the story of how the mine was first discovered in 1820 by two young students who had become interested in mineralogy, and who spent much of their leisure time in searching for minerals among the exposed ledges and in the mountains around the village. The names of these students were Elijah L. Hamlin and Ezekiel Holmes. Hamlin was a permanent resident of the village, but Holmes was only temporarily there as a student.

The continuation of the story as given below is extracted and abridged from Mr. Hamlin's more detailed account.

Late in the autumn of 1820, and on one of its clear calm days, the two students started to explore the range of hills which form the eastern boundary of the town, and stretch away until lost among the mountains around Molly Ocket. They had spent most of the day along the mountain ridge to the southward, and were descending the western declivity on their way home, just as the sun was setting behind the great range of the White Mountains, fifty miles away on the western horizon. Young Hamlin, fascinated with the entrancing picture, halted for a mo-

*Published by Augustus Choate Hamlin in Bangor, Maine, 1895.

ment on the crest of a little knoll to enjoy the scene. On turning to the eastward for an instant for a last look at the woods and mountains in his rear, a vivid gleam of green flashed from an object on the roots of a tree upturned by the wind, and caught his eye.

Returning to the spot, some yards in his rear, he perceived a fragment of a transparent green crystal lying loose on the earth which still clung to the roots of the fallen tree. The student clutched the glistening gem with eagerness, and called back his companion. After examining the newfound treasure, the boys searched the surrounding soil for other specimens; but the rapidly deepening twilight soon compelled the youthful mineralogists to abandon the search They resolved, however, to return early in the morning and continue the exploration. But during the night a storm arose, which covered the hill and its adjacent fields with a thick mantle of snow, which remained until the next spring.

As soon as the winter's snows had melted away, the students returned to the search. They went directly to the bare ledge which crops out on the brow of the hill, and which they had not examined on their previous visit before darkness had overtaken them. As they climbed up the smooth and denuded surface of the rock they were astonished to observe many crystals, and fragments of crystals, lying exposed on the bare ledge, and sparkling in the rays of the sun. These they carefully gathered; and tracing others to the earth below the ledge, which had formed from the decomposition of the rock, they eagerly turned up the soil in search of its hidden treasures. Thirty or more crystals of remarkable beauty and transparency rewarded the labors of the students, and with mingled feelings of joy and wonder they held them up to the rays of the sunlight and admired their varied colors of green, red, white and yellow in different shades. They had, indeed, stumbled upon one of the richest and rarest of nature's laboratories. All around the brow of the ledge enormous masses of rose red lepidolite, splended groups of crystallized quartz of white or of smoky hues, black crystals of the oxide of tin, broad foliae of glistening mica, snowy flakes of feldspar, studded with minute crystals of green and red tourmalines, lay scattered about in profusion.

Collecting as many of the choice and beautiful specimens as they could carry, they returned to the village and sought to ascertain the nature of their mineral treasures.

Subsequent examination indicated that the ledge was perforated with cavities in which the tourmalines and other minerals had been deposited. It was also evident that the crystals that had been gathered by the students had been set free from their cavities by the decomposition of indefinite periods of time, which had disintegrated the surface of the ledge. There was no evidence of drift. The crystals lay exposed upon the rocks, while the softer and more perishable material had been set free and washed by the rain and blown by the winds down to the base of the ledge and accumulated, in time, as soil. Parts of the ledge yet exposed to view were fairly honeycombed with small cavities and soft spots, where the decomposing feldspar was crumbling away. In these cavities and decayed places in the rock, other tourmalines were obtained by breaking away the edges of the cavities, removing the decomposed material.

As soon as the villagers heard of the discovery, many of them hurried to the place and secured many fine specimens as trophies or as souvenirs.

As no one in the vicinity was able to distinguish the character or nature of the specimens, or even call them by name, the students enclosed a few of the smaller crystals in a letter to Professor Silliman, of Yale College, and requested him to identify them. He kindly and promptly informed the youths that the minerals were tourmalines and of rare occurrence. Thereupon they selected a number of the finest and purest of the crystals and addressed them to the professor in return for his kindness. The parcel was entrusted for safekeeping to the late Governor Lincoln, who was then a member of con-

gress, and was about to start to Washington. At that period the journey to the capitol was a serious undertaking, and the condition of the roads was such that most of the distance had to be traversed on horseback. The Governor started safely with the precious package but lost it before reaching New Haven and no trace of it has ever been found.

Two years after the original discovery, the two younger brothers of the discoverer, Cyrus Hamlin, and Hannibal Hamlin (afterwards the Vice-President), though scarcely in their teens, resolved to make a more complete exploration of the ledge. Having borrowed some blasting tools in the village, they proceeded to the hill and managed in a rough way to drill several holes on the ledge and blast them out. These operations, though of trivial magnitude, were attended by unexpected results, for the explosions threw out, to the astonishment of the boys, large quantities of bright colored lepidolite, broad sheets of mica, and masses of quartz crystals of a variety of hues. The last blast revealed a decayed place in the ledge which yielded readily to the thrusts of a sharpened stick or the points of iron drills. As the surface was removed, great numbers of minute tourmalines were discovered in the decomposed feldspar and lepidolite. The rock became softer and softer as the boys proceeded in their work of excavation, and soon they reached a large cavity of two or more bushels capacity. This hollow or rotten place appeared to be filled with a substance resembling sand, loosely packed. Amongst this sand or disintegrated rock, tourmaline crystals of extraordinary size and beauty were found scattered here and there in the soft matrix. Scratching away with renewed energy, the boys soon emptied the pocket of its contents and found that they had obtained more than twenty splendid crystals of various forms and hues. One of these was a magnificent tourmaline of a rich green color and a remarkable transparency. It was more than two inches and a half in length by nearly two inches in diameter, and both its terminations were finely formed and perfect.

Several others possessed extraordinary beauty, and some of them were quite three inches in length and an inch in diameter. The colors were quite varied, but were chiefly red and green, and they equaled, if they did not surpass, in beauty the crystals previously collected by their brother, Elijah. The exact number of crystals obtained by the boys is not known, but when collected together, with the fragments of others, they filled a basket of nearly two quarts capacity. Besides the tourmalines, the quantity of lepidolite, mica, and other choice minerals thrown out by the blasts or found in the sides of the cavity was so great that the boys had to get an ox team to take them home.

So little was known of the value of these minerals at that time that their possessors considered the finest of their treasures to be worth about a guinea. The younger brother, former Vice President Hannibal Hamlin, was little interested in minerals and gave his share to his brother, Cyrus, who placed himself in correspondence with mineralogists in the United States and Europe, and from time to time disposed of nearly all the finest of the crystals. When he died, many years ago, there perished with him all knowledge and history of the distribution of these remarkable crystals and gems.

This is all that is known of the history of the splendid gems and remarkable crystals that Mount Mica yielded to the explorer in its early and best days. Gathered then in profusion, and carelessly treasured, they have since been scattered over the world, and in many instances their identity has been completely lost.

A very fine and perfect crystal of light green tourmaline, three and a half inches in length, was loaned by Elijah Hamlin, in 1822, to a friend in Portland, and was lost in that city. Another beautiful specimen was given to Governor Lincoln, who afterwards gave it to the Lyceum at Worcester, Massachusetts, where it remained for many years, until it passed into the hands of Professor Burbank, who caused it to be cut. The lapidary, Reynolds, obtained from it a splendid gem of great beauty and purity, of fifteen carats weight.

A few days afterward, Burbank lost it while crossing a field of grassland, and all efforts to find it proved unavailing.

After these early explorations had come to a standstill, many years passed before anything further was done. In 1864, Mr. Samuel R. Carter, of Paris, commenced work in front of the pit made by the former explorers, and started a cut in the ledge 40 or 50 feet to the westward, intending to strike the mineral belt at a greater depth than had been previously reached; but after removing many tons of rock and finding no signs of the deposit, he stopped work. However, some curiosity seekers, visiting the place with the owner of the farm, struck a large cavity and obtained many beautiful fragments of tourmaline of various tints and colors.

Just after the close of the Civil War in 1865, the original discoverer of the first tourmaline, together with his son, Mr. Augustus Choate Hamlin, the author of the book, renewed the explorations. At that time the pit was only a few feet in extent, and about five or six feet in depth. There was only a minute speck of lepidolite visible, and the mineral seekers had carried away all the lithia minerals and other unusual stones that could be found by digging in the soil and removing all the broken parts of the ledge. Without much hope, the two Hamlins attacked the ledge where the speck of lepidolite appeared, and at the first blast they were rewarded by finding a small cavity of tourmaline. This little cavity was the means of the explorations which have brought to light some of the most remarkable treasures of the locality, and made the place famous in mineralogy.

In 1871, Mr. Hamlin and Prof. Leidy of Philadelphia made a further exploration which brought up some fine specimens; but the rock then appeared so devoid of lithia minerals that further operations were suspended. Later the same year, a party of miners, hunting for mica for commercial purposes, took possession of the ledge, and proceeded to remove rock on the eastern side of the pit. They had removed about three hundred tons of rock and had descended to a depth of eight feet, when they struck a string of gem cavities. The ignorant miners pocketed some of the largest and brightest crystals and shoveled the rest of the contents of the pockets into the dumps, whence many fine crystals were later discovered.

Among the debris were discovered the remains of one of the most remarkable groups of tourmalines yet discovered in any part of the world. They were formed on a mass of white quartz about eight inches square and five in depth, and upon this matrix nature deposited nine distinct transparent tourmalines of great beauty and value. Upon its summit arose a crystal of tourmaline quite two inches in diameter and over two inches in height. It was pink at its base, changing towards the summit to a delicate and gorgeous carmine. Had the cavity been opened by anyone acquainted with mineralogy, the group could have been saved, and a specimen of surpassing beauty could have been preserved for science.

Mr. Hamlin, again taking courage at the success of the mica hunters, renewed his explorations, and with success. Later, he formed the Mount Mica Company, and in 1881, several more cavities were opened up. Explorations were continued from time to time for many years, but finally were discontinued. However, the present owner, Mr. Irish, would like to resume operations, and may do so if the necessary financial assistance can be found.

A peculiarity of the Mount Mica tourmalines is the fact that many of them were found lying in a bed of Cookeite in the cavities, apparently perfect in form and color, but so disintegrated from the passage of time, in combination with the seepage of water into the cavaties, that on attempting to remove them, many fine specimens crumbled away, leaving generally a nodule of clear green or other color in the center of the shaft, and always of the most perfect transparency. Some of the crystals crumbled away in the lower parts only, leaving the summits or the upper portions of the crystals in perfect condition.

A dramatic occurence was the finding, in 1879, of the summit and upper part of the original crystal of 1820. This tourmaline is shown in the sketch, and it will be seen that it is in two parts, separated by a crack about three quarters of an inch from the bottom. It is of a fine, clear, grass-green color, and the lower section is the identical fragment which was lying on the dirt in the roots of an upturned tree, and thus attracted the eye of Elijah L. Hamlin when he discovered the locality in 1820. For 59 years the upper portion and summit of the crystal had escaped the observation of the many explorers who had visited the ledge and had dug and blasted about it for more than half a century. The two fragments had become separated during a long period of time by the rains and the winds, and were found several rods apart.

After our return home, Mr. Irish wrote me "Lauren Merrill did the actual work at Mt. Mica for some 28 years, and sold a very beautiful compound group of green and pink to a woman whose name he did not keep. It was 15 inches high, was called the finest specimen ever found, and was sold for $150. Mr. Lauren's son-in-law, Mr. Arthur Valley, of Paris Hill, Maine, has a colored picture of this group. If these circumstances were made known, I wonder if someone might recognize this fine crystal in some collection."

SAN DIEGO COUNTY TOURMALINE LOCATIONS

Another American tourmaline locality that is second in fame only to Mount Mica is Pala, in San Diego County, California. We had been there before, but that was before the recent War, and after visiting Mount Mica, we thought we ought to go there again, in spite of the fact that CALIFORNIA GEM TRAILS states that collecting can be done only on permission of the Indian agent, and that several attempts made in 1946 and 1947 to obtain permission were dismal failures. At least we could take a look around a few western mineral localities and visit some of the dealers, so we headed the car West.

First stop was at Denver, where we visited the Pohndorf shop, and called on E. Mitchell Gunnell, who has about the best stock of showy and spectacular minerals that we know of anywhere. Then we went on to Bayfield, and bought a few items from our old friend, Mr. Green, of the Gem Exchange, and some from Mr. Neunschwander, of the Colorado Gem Company. At Gallup we got some superb specimens of chrysocolla. At Los Angeles we had to forego our usual visit to the Grieger establishment, as John is open for visitors only Friday and Saturday, and we were there the early part of the week. We did visit the Gemological Institute of America, and paid a visit to Gordon's at Long Beach on our way south.

At San Diego we had a friend who was said to know all about the minerals of San Diego County. We soon found that it was a considerable overstatement. He did, however, know a well-to-do rancher who lived at Pala, who was supposed to

Full sized sketch, the bottom portion of which shows the crystal fragment of clear green tourmaline which was seen lying on the roots of an upturned tree in 1820 by Elijah Hamlin, while the top portion was found some yards away 59 years later.

know all the ropes about the tourmaline mines, and who promised to show us the contacts. The rancher was most cordial, and gave us a note to the village storekeeper in Pala, asking him to let us see the stones he had on the counter of his store. Just why he gave us this note, or what good it did, I don't know, for the stones were there on the counter or in the showcase for all comers to see as they please, note or no note. Moreover, we saw nothing there that would have improved the collection I already had.

While driving out of San Diego we had noticed a lapidary shop called Gem Arts, at 4286 Marlborough Avenue, and on going in, we were most courteously received by the proprieter, Mr. George N. De Vorss. He told us that if we were going to Pala, we ought by all means to see Mr. George Ashley. So after leaving the village store with a rather low opinion of Pala and all its works, we got a pleasant surprise when we visited Ashley in his cottage by the foot of the mountain, a mile or so away. He is a miner and a gem cutter and a lover of gems. He knows how to cut kunzite, and anyone who has had any experience with that tricky gem will agree that it takes skill. Ashley has that skill, perhaps to a greater degree than anyone else alive. He showed us some marvelous specimens, and was as courteous and patient as only a dyed-in-the-wool rockhound can be to another of the same breed. Only trouble with Ashley is that he loves his gems so much that he won't sell any of his really good ones. He will never get rich that way, but who can blame him? He has the right idea.

On the way back, besides the usual exploring and collecting, we bought specimens from Mr. Matteson, of Phoenix, who has superb, rare, lead minerals; we stopped to see Mr. and Mrs. Joe McCarty, "by the water tower" at Lordsburg; and we found Mr. Harris, the Rock Man, by the Big Canyon in El Paso, who showed us that Texas does have really superb agates.

By this time fall was upon us, and we were due back in Washington, so we hit the road and made no more rock stops until we began unloading the car in our own back yard.

The net result of all this is that we haven't seen enough of Mount Mica, and of several other famous Maine localities. There's still tourmaline in "them there hills!"; and nowhere else in the world are the hills themselves as beautiful as they are in Maine.

ORE FROM MINE AT FRIEDENSVILLE BY 1951, MIT TOLD

Ore will be coming from the Friedensville mine of the New Jersey Zinc Company in 1951, according to Lindsay Johnson, assistant manager of the New Jersey Zinc Company, Palmerton, Penn., who spoke on the activities of his company recently at a meeting of the Massachusetts Institute of Technology Club of the Lehigh Valley in the Hotel Bethlehem.

Introduced by E. J. Flynn of Palmerton, president, the speaker said work at the near by operations are going on schedule. Plans call for sinking a 1200 foot shaft at the location and then processing the ore at Palmerton.

Howard Cyr discussed the products manufactured by the zinc company and presented a display of fluorescent pigments. It was announced that the annual meeting of the group will be held in Palmerton some time in May.

— *Bethlehem Globe Times*, Bethlehem, Penn.

Editor's Note: It is most gratifying to hear that this old zinc mine (long abandoned) will soon be in operation again. The mine is located in the tiny hamlet of Friedensville, a few miles south of Bethlehem, and is especially famous for its nice greenockite specimens.

TRIP TO MEXICO

By PETER ZODAC
Editor, Rocks and Minerals

Introduction

On April 17-18, 1948, the Annual Mineral Show of the State Mineral Society of Texas was held at Hotel Driskill, Austin, Texas. Mr. J. J. Brown, President of the Society, extended me such a cordial invitation to take in the big event that I could not very well refuse nor did I want to. By a fortunate coincidence, Don Gabriel, of Detroit, Mich., had planned a mineral trip to the opal mines near Queretaro, Mexico, about the same time and learning of my trip to Texas, invited me to go down with him as he was going alone and would stop off for the show. I had been with Don on a short trip once before and found him to be such a delightful person and a mineral collector of good judgment with a warm appreciation of fine minerals, that his invitation was most enthusiastically received.

1st Day
(Sun. April 11, 1948)
Air Trip To Detroit

I got the 12:55 p.m. train (actually the 11:02 train as it was almost 2 hrs. late) out of Peekskill for New York City, 41 miles to the south. The weather had been nice so far but when we almost reached the city it began to rain and when we got off at the Grand Central Station the rain was coming down so heavily that many minutes went by before I could venture to cross the street to the plane terminal office which was directly across from the station — even so I had to walk in the rain as I had only a few minutes left to catch the limousine for the Newark Airport at Newark, N. J.

The plane left at 4:00 p.m. It was still raining heavily; it was raining at Allentown, Pa., our first stop; at Youngstown, Ohio, our second stop, the rain came down in one sheet; at Akron, Ohio, our third stop, it was still raining and I began to worry for fear the weather next day would be anything but pleasant for the trip south from Detroit. I have made about one dozen long trips by plane and in every case it rained either going or coming but this trip to Detroit was the worst of them all for rain. Before we reached Detroit, however, the rain had ceased and the sky was clear. The night view of Detroit and its neighboring city of Windsor, Ont., Canada, with the Detroit River between them, was most impressive. We arrived at our destination, Willow Run Airport at 9:45 p.m. (1 hr. late). Here Don and his mother were awaiting me.

It took about an hour to reach Detroit (the airport is 32 miles west of the city) and our first stop was at Don's home to inspect his mineral collection, which I had never seen before but about which I heard many favorable comments. To say that I was amazed and delighted over what I saw is putting it mildly. The collection consisted of extra choice specimens. There were many finely crystallized specimens, polished specimens of unusual beauty, etc. etc. etc. His Michigan specimens — coppers, silvers, rock crystals, agates, amethyst and others were outstanding. Some day I will have to go back and make notes on them for *Rocks and Minerals,* as the collection deserves a good write-up.

Don had a room reserved for me at the Detroit-Leland Hotel where I spent the night, tired but very happy.

2nd DAY
(Mon. April 12, 1948)

The day turned out to be nice and sunny and though we had planned to leave early it was not until 12:30 p.m. that we finally got away. The speedometer read exactly 1,000 miles at the hotel (our starting point) but we will call it 0.00 for easier figuring. We took U.S. 112 which went in a southwesterly direction out of the city. I saw the shaft of a salt mine[1] while still in the city but we made no attempt to stop as the mine is closed to visitors. We went past the Willow Run Airport, went through Ypsilanti and Saline, and

[1]Trip to Detroit, by Peter Zodac. *Rocks and Minerals,* Nov. 1947, P. 1011.

made our first stop 73 miles away from the city, to examine some pebbles in a small road cut. As I am keenly interested in pebbles, Don was kind enough to make many stops on our way to and from Mexico, in order that I might examine those seen along the route. The stops made are as follows: (nearest town to stops made are also given).

66.0 Clinton, a small town on US 112.

73.0 Stopped to examine some pebbles in small road cut on US 112; these turned out to be grayish chert.

74.0 Evans Lake, to left, a nice body of water.

88.0 Somerset, small hamlet.

90.0 Small gravel bank, both sides and adjacent to US 112, each about 100 ft. in diameter. Among the most interesting pebbles collected were microcline (reddish masses); quartz (basanite), a nice one inch black pebble; and a small milky quartz pebble.

122.0 Coldwater, Mich., a nice town. Here we turned left on US 27 which went due south.

123.0 A whitish ½ inch chert pebble was picked up from the terrain to the right of US 27. This pebble has a greenish phosphoresence under the Mineralight.

135.0 Indiana line crossed on US 27.

139.0 Potowatomi Inn. Although it was only 3 p.m. we decided to spend the night at this noted inn in Pokagon State Park. of northern Indiana. In summer you must make reservation long in advance to get in but in the spring it is not crowded and we had no trouble. The inn is a very nice place and reminded me of Bear Mountain Inn in the Interstate Park (near Peekskill, N. Y.). Not only were the food and rates reasonable but some interesting boulders along the road at the inn were worth examining, one was a large jasper conglomerate. Along the shores of nearby Lake James, a beautiful lake 300 feet away, are many pebbles among which we found red microcline and brown jasper. There may be other interesting minerals in the beautiful park but we had very little time to investigate for within 30 minutes after we registered at the inn it began to drizzle and then rain heavily. Don, who had been at the Inn on a number of occasions, took me downstairs to the basement where a large room is set aside for the playing of billiards, pool, table tennis, etc. Here we were in our glory as we had the room all to ourselves.

Mileage for the day — 139.

3rd DAY
(Tues. April 13, 1948)

I woke up at 7:15 a.m.; some kind of patter had awakened me and it seemed to come from the window. I got up to look out and was amazed to see it was hailing. The little globules of hail would spatter against the window pane and roll gently down the roof (our room was on the top floor and had a gable window).

139.0. We left the Inn at 8:30 a.m. (after a good breakfast), headed east for US 27, a few hundred feet away, and on reaching the highway turned right and headed southward. The ground was covered with a thin coating of snow and hail — it was still snowing which later turned into rain.

145.0. Angola. A nice town, county seat of Steuben County.

185.0 Fort Wayne. This large city is the county seat of Allen County. Here we took Ind. 37 which went southwesterly through Huntington, Marion, Noblesville and into Indianapolis, the capitol and largest city of the State.

295.0 Indianapolis.

312.0. Here we made our first stop of the day (heavy rain prevented others). In the terrain adjacent to Ind. 37, we found nice pebbles of greenish epidote associated with red microcline, also white chert pebbles. This locality is in Johnson County.

316.0. Morgan County line on Ind. 37.

330.0. Martinsville, county seat of Morgan County.

351.0. Huge limestone quarry to right of road. Due to rain we did not stop. (Later we learned that the rock quarried, Bedford limestone, is a good building stone, but that no minerals occur in the quarry).

352.0. Bloomington, county seat of

Brown County, and home of Indiana University. Even though it was raining quite heavily, we could not go through the city without calling on Mr. Ronald L. Ives, Vice-President of the Rocks and Minerals Association, whom we never met personally. After some difficulty, due entirely to the heavy rain, we managed to locate him in the Geography Department at the University where he is an instructor. He was as much delighted to see us as we were to see him and we spent a most interesting hour together — we would have liked to stay longer but he had classes to attend to and with great reluctance we had to leave.

There were so many buildings at the University that a stranger should have a guide to take him around, or were the number of buildings magnified five-fold due to the large raindrops!

We took Ind. 45 out of Bloomington, still heading southwest.

357.0. Big limestone quarry to right but due to rain we did not stop.

365.0. Stanford, small hamlet.

Dotted line shows route from Detroit to Texarkana taken by the two collectors.

366.0. Greene County line.

371.0. We turned right on Ind. 54. Here I found a small gray chert pebble in the nearby terrain.

384.0. Bloomfield, county seat of Greene County.

391.0. Switz City, a small hamlet. We turned left here on Ind. 67.

410.0. Edwardsport, on Ind. 67.

413.0. A big quarry (?) could be seen about ½ mile to the right but due to rain we did not investigate.

414.0. Bicknell, a small town.

415.0. A bituminous coal mine (soft coal) — the Sun Mine — about 300 feet to right of Ind. 67. It was in operation but due to continued rain we did not stop.

428.0. Vincennes, county seat of Knox County. The city is on the east bank of the Wabash River which here divides Indiana and Illinois.

431.0. State Line on bridge over the Wabash River (on US 50) which we took out of the city.

440.0. Lawrenceville, Ill., on US 50. We turned left here on Ill. 1. About 10 miles south of Lawrenceville, oil wells made their appearance which continued for many miles southward.

464.0. Mt. Carmel, Ill. We reached this little town at 7:00 p.m. and remained here for the night. We registered at the New Oakland Hotel, a nice little place. It stopped raining when we arrived in Mt. Carmel.

This was the poorest day, mineralogically, of the entire trip, due to the heavy and continued rain. In some places in Indiana the rain had been so heavy (for a number of days) that fields bordering the highways became small ponds and lakes which in places threatened to cover the road.

Mileage for the day — 325.

4th DAY

(Wed. April 14, 1948)

464.0. Mt. Carmel, Ill. We left the town at 7:00 a.m. and headed southward on Ill. 1.

465.0. Oil wells again make their appearance and they continued along the highway (both sides) for many miles; at one place, 471.0 miles, we saw an oil well in the front yard of a home. At Norris City, the road swung almost due south.

528.0. Saline River crossed. A historical sign was seen on the south side of the bridge but we did not stop to read it — I believe it had reference to some saline springs on or near the spot.

547.0. Cave-in-Rock. This little hamlet, on the north bank of the Ohio River, is world-famous for the fluorite mines in its vicinity.

548.0. We turned left (for Elizabethtown) on Ill. 146. Directly opposite the turn (to right of Ill. 1) is a working quarry (in limestone, I believe) but we did not stop to visit it. We never realized its presence until we had gone a few hundred feet on Ill. 146. when a blast in back of us attracted our attention; we looked back and thus spotted the quarry with the smoke from the blast still visible.

550.0. We turned right on a dirt road for the Crystal Mine (fluorite). I had been there before (Tues. Oct. 28, 1947) and so was familiar with the locality.

551.7. Crystal Mine. We had hopes of meeting Mr. M. M. McClelland, Superintendent of the mine (and a member of R&MA) but he was at home for the day. However, Mr. Dodd Gibson, one of the owners of the mine, was present and he greeted us very cordially. We were granted permission to collect off the dumps and a number of interesting minerals were found. Among them were:

Fluorite: The finest fluorite crystals in the district come from this mine. Deep purple cubes and crystalline masses are common; also amber-yellow cleavage masses.

Galena: Small cubes and masses associated with fluorite.

Sphalerite: Tiny dark brown gemmy crystals in cavities of fluorite.

The crystal Mine is one of the largest operations in the area and produces, perhaps, the largest and finest fluorite crystals in Illinois, hence its name, Crystal Mine. It is an underground mine with a vertical shaft.

About ½ mile towards the main road,

an abandoned fluorite mine is on the right which we stopped to investigate. A long level adit (or tunnel) was soon spotted and getting our flashlights we entered it on a tour of inspection.

The adit was about 6 x 6 feet in area and dry for several hundred feet — we looked here and there but not a single crystal nor any mineral could we spot. The adit then became wet and by the time we reached the 300 ft. mark the water became so deep that we were forced to stop; we turned around and walked out without even one specimen between us.

There was a small dump at the mine and from it a number of interesting specimens were collected. Among them were:

Barite: White, massive, with purple fluorite.

Calcite: Dark grayish crystalline masses in diamond drill cores of which a number were seen.

Fluorite: Nice crystallized specimens, brownish in color with purplish edges.

We then continued on towards the main road (Ill. 146), turned right and 0.3 mile further, turned right on another dirt road which led to the Alco fluorite mine (on the Benzon property) 0.9 mile in. The mine was not working and we spent an hour or more rambling over the small dump and roaming over the terrain. The mine was opened by an adit but we did not explore it more than 10 feet, thinking that miners were around and we would be chased out; later we learned that the mine had been shut down, temporarily, and no one was around. Among the minerals collected at the mine were:

Barite: White crystalline masses with galena.

Calcite: White tiny crystals on purple fluorite.

Chalcopyrite: Small crystal in calcite.

Fluorite: Dark purple crystallized masses; also purplish and yellowish crystalline masses.

Galena: Lustrous coarse crystalline mass on white crystalline barite.

Limonite: Dark brown cellular masses (bog ore).

Malachite: Greenish stains surrounding chalcopyrite.

About 300 feet past the mine was another working, the Austin Mine, which was opened by a small vertical shaft. I spent only about 5 minutes at this mine as no dump was seen although a small stock pile was in evidence near the shaft. A miner was at work around the shaft who, after learning of my interest in minerals, gave me a fine dark purple crystallized fluorite; this was the only specimen obtained from the Austin Mine.

555.2. Main road again (Ill. 146). We turned right heading for Elizabethtown where we stopped at the home of Mr. Dodd Gibson who had invited us to call on him. Mr. Gibson had in his home a very fine fluorite specimen from the Crystal Mine which he gave Don; this was why we were asked to call on him. His nice home is in the heart of Elizabethtown, on the bluff over looking the Ohio River. A very old abandoned limestone quarry is at the edge of the property, this I examined but found only small dark gray masses of chert in the dark gray compact limestone. The Ohio River flows along the base of the bluff.

Mr. Gibson gave us directions for reaching the home of Mr. McClelland (also in Elizabethtown) which we soon reached. Here we spent a most enjoyable two or three hours with the McClellands enjoying his mineral collection which consisted chiefly of very fine specimens from the fluorite mines of the area and carrying on a general conversation with both Mr. and Mrs. McClelland. Before we left, Mr. McClelland presented each of us with a very fine barite specimen from the Crystal Mine.

Our visits in Elizabethtown were so interesting that we forgot all about the mileage and so it was never recorded.

We continued westward for Rosiclare around which are more fluorite mines, of which one of the most important is the Alco mine, right in the heart of the little town. We had no time to visit the Alco mine but we did stop to call on Mr. E. A. Brecke who is connected with the Ozark-Mahoning Co. whose plant is in Rosiclare but whose fluorite mines are in

Cave-in-Rock, near the Crystal mine. Mr. Brecke, a member of the R&MA, received us cordially, guided us through their large plant and permitted us to collect specimens from their huge stock pile. From the specimens collected at the stock pile and especially those sent us later by Mr. Brecke the following are some minerals which occur at the Ozark-Mahoning fluorite mine, Cave-in-Rock:

Calcite: Light brown transparent crystals associated with deep purple fluorite crystals.

Chalcopyrite: Tiny masses in sphalerite.

Fluorite: Deep purple cubes with sphalerite on drusy milky quartz. Also yellow, purple and light blue crystal masses. All beautiful specimens.

Galena: Coarse, crystalline masses.

Oil: Tiny rounded and elongated brownish globules in light blue transparent fluorite — one elongated globule shows a movable bubble. The oil fluoresces yellow under the Mineralight and green under the Argon bulb.

Quartz (*Drusy*): Very coarse crystals and almost milky in color.

Rock Crystal: Small crystals with sphalerite crystals.

Sphalerite: Small dark brown crystals with tiny rock crystals in cavities of fine-crystalline sphalerite. Lustrous deep brown (almost black) group of crystals.

Rosiclare (a small hamlet on the Ohio River) is several miles south of Ill. 146 so we had to retrace our route northward. On reaching 146 we turned left and headed westward again.

564.0. Golgonda on Ill. 146.

595.0. Rock. We saw no large rock nor any interesting rock that might be the reason given the name of the little hamlet, Rock, so we did not stop except to slow up a little as we made a left turn on Ill. 145 to head south.

610.0. Junction of Ill. 145 and US 45. I saw some pebbles near the road and got out to look them over. They appeared to be all limestone, one, however, was smoky quartz with a cavity incrusted with drusy quartz.

613.0. US 45 near Brookport. Nice brown jaspers collected from the terrain near the road.

616.0. Brookport, Ill., on the Ohio River (on US 45).

617.0. End of long bridge across the Ohio River into Kentucky.

It was long past six and quite dark now and we had planned to stop for the night in Paducah, Ky., which city we soon reached. We were hungry also but we never stopped. The heavy rains of the past number of days were most alarming, according to radio reports, as floods and highwaters seemed to be everywhere in the area through which we were traversing. We might have trouble crossing the Mississippi, tomorrow, so we decided to cross it tonight. Therefore we never stopped in Paducah, not even to eat, but headed westward on US 60 through an area noted for its fine jasper pebbles (from Paducah to Cairo, Ill. — see "They pave roads with jasper in Kentucky," by Peter Zodac, *Rocks and Minerals*, May, 1948, pp. 398-400).

656.0. Cairo, Ill. Cairo is at the extreme southern tip of Illinois, at the junction of the Ohio and Mississippi Rivers. We crossed the Ohio over a toll bridge — a few hundred feet further on the bridge over the Mississippi begins (I believe the same toll house serves both bridges but may be wrong). We crossed the Mississippi into Missouri (US 60) and continued westward.

669.0. Charleston, Mo. on US 60.

689.0. Sikeston, Mo. on US 60. We spent the night in this little town at the Rail Haven Courts. After our cabin was obtained, we had a good meal at a nearby restaurant.

Mileage for the day — 225.

5th DAY

(Thurs. April 15, 1948)

689.0. Sikeston, Mo. While waiting for Don to get ready, I walked around the cabins and noted many yellowish brown jasper pebbles. A small white crystalline calcite (in dark gray compact limestone) was also collected — later on reaching home this calcite was noted to phosphoresce pale greenish white under the Mineralight.

We continued westward, on US 60, pas-

sing through Morehouse, Gray Ridge, Essex and Dexter.

714.0. Dexter, Mo., on US 60. We stopped for gas here and learned that in the large gravel pits around here are found huge amounts of jasper, so plentiful is the jasper that it is used for road fill, concrete construction, etc. (just like in Kentucky and around Cairo, Ill.), and hauled for long distances. This explains why I was seeing brown jasper pebbles all along the road from Sikeston to Dexter and beyond.

716.0. Stewart's gravel pit seen about ½ mile to right but we did not visit it. We did, however, get out of the car to examine some pebbles and boulders seen in a brook which crosses the road (US 60). The brook was full of brown jasper (good quality) which varied from tiny up to 3 x 3 inches, and over.

730.0. St. Francis River crossed, with the little hamlet of Fisk on its western edge.

739.0. Popular Bluff, Mo. Nice city but hilly, on the west bank of the Black River.

742.0. We turned left on US 67 and headed south.

763.0. Got gas here — Arkansas State Line 300 feet ahead. I collected 2 jasper pebbles (yellow brown) in the terrain near the road.

769.0. Corning, Ark., on US 67. From here US 67 goes due west then southwest and at Pocahontas (796.0) it goes due south, crosses Black River again and at Walnut Ridge (809.0) it goes southwest and continues in a straight line for many miles.

829.0. Swifton (US 67). Noted many yellow brown jasper pebbles in the terrain near the road.

846.0. Newport. Crossed White River here.

859.0. Beginning of hilly country which up to now has been very flat.

875.0. Bald Knob. According to the State map, an old salt mine is here but since we did not see it from the road we did not stop to investigate.

885.0. Little Red River crossed.

899.0. McRae, Ark., on US 67.

901.0. Stopped to examine some pebbles in the terrain — saw some milky quartz but no jasper.

939.0. Little Rock, the capitol and largest city of Arkansas. It is beautifully situated on both sides of the Arkansas River and received it name from the rocky cliff on which it is located. We had a fine meal here at Francke's Cafeteria, a famous eating place.

964.0. Benton, a nice town on US 67. Got gas here. I noted some brown jasper and milky quartz pebbles in the gravel around the gas station; the attendant said it all came from the creek bed, 3 miles away. The famous bauxite mines at Bauxite, about 5 miles to the east, could be seen from the gas station; the attendant pointed them out to us but we did not go to them.

976.0. Hot Springs County line, US 67.

987.0. Malvern. We turn right on US 270.

995.0. Magnet Cove, Ark. This is one of the most famous mineral localities of the world. It was my first visit and I was terribly disappointed as it was not what I expected to see. In some manner I had expected to see a very flat treeless terrain with high cliffs bordering it on three sides — this was the impression received from reading old reports. So you can imagine how I felt after riding along a level road for many miles, with trees thickly bordering both sides, to suddenly come upon a small general store, on the right, with the magic words — Magnet Post Office — over its entrance and the terrain hilly, full of trees, and not inviting. I got out of the car, looked around in a bewildered manner, and walked dazedly into the store. In the store I engaged a young man in conversation who seemed to know a little about minerals; he told me about a number of locations along the road, one in particular where lodestone could be found, but not even one locality could I spot after leaving him. He told me also about a big barite mine somewhere in back of the store (I noticed huge tracks going back and forth but there seemed to be so many of them and all in a hurry, on a narrow

dirt road, that it were best not to try to pass them). I got back in the car, and we continued on but stopped again within a few hundred feet for to our right we saw a sight which made our mineral-hungry hearts leap for joy. The sight was a large pile of rocks and minerals displayed on the side of a small hill. They were local Cove minerals, we soon found out, and for sale. Out of the lot I picked out three specimens — massive purple fluorite associated with massive bluish quartz, pyrite crystal in white crystalline limestone, and a small smoky quartz crystal. My three specimens cost me $1.00; I do not recall what Don purchased. Though there was quite a supply, the material was more suitable for rock gardens then for collectors but we just had to get something from the locality. The woman who waited on us knew very little about minerals and practically nothing about their occurrence so she was of no help to us regarding information.

996.0. We stopped again near a small white church which stood about 100 feet to right of the road and alongside of a brook. I was curious to see what pebbles might be found in the brook and got out to investigate and collected three specimens — a small milky quartz pebble, another pebble so heavily stained by limonite (ferruginous quartz) that it could pass for brown jasper; and a 1½ x 1½ inch book of green biotite (looks like clinochlore). These were the only specimens we collected in Magnet Cove.

997.0. A small quarry in crystalline limestone on the right and close to the road. We came upon it so suddenly that we passed it before I could yell, Stop! — but we did not stop. Either Don did not see the quarry or else he misunderstood my yell (we were going at a good rate of speed).

A very good article on the locality "Mineral collecting in Magnet Cove, Arkansas", by Woodland G. Shockley, appeared in the June, 1948, issue of *Rocks and Minerals*, pp. 483-495. If that article had only been printed sooner, we would never have rushed through Magnet Cove in the way we did; the map alone would have been of immense value to us. (Magnet is the post office name for Magnet Cove).

1009.0. Hot Springs National Park. This is the nation's health and pleasure resort. It is a beautiful city with many large and handsome buildings and hotels. Here we stopped to call on a member of the R&MA, Byron C. Marshall, who conducts a mineral and curio store at 204 Central Ave. We could spend only a few minutes with him as we were anxious to reach Murfreesboro. Mr. Marshall has a very nice store with many interesting minerals on display — I could only glance at them — saw a nice rock crystal labelled "Garland Co., Ark", which I bought and —we were on our way again. Someday I hope to pay Mr. Marshall another visit and inspect his stock at leisure.

From Hot Springs National Park we took US 70 which went southwestwardly.

1016.0. Long concrete bridge over Lake Hamilton.

1042.0. Glenwood.

1052.0. Kirby, Ark., a very small town but noted for the mercury mines near it. Here we took Ark. 27 which runs south.

1058.0. Dirt road to right. Sign here reads "National Quicksilver Mines, 6 miles". It was getting late and we were in a quandary. Should we try to take in the mine tonight (which was on our itinery) or go on to Murfreesboro, 9 miles ahead, and come back in the morning? We decided to go to the mine.

The road was good for a mile or so when we came upon a spot which seemed hopeless to get over. A wooden bridge over a wide brook had collapsed and appeared useless to a car — the road was wide here and we saw that trucks had gone through the brook, to the left. If the bridge was out of the question, the brook itself was worse for our car. Being an X-mining engineer with some years experience in civil engineering (especially road construction) I got out, examined the bridge critically and then said (with my heart in my throat), "Come on, she will hold". Don came and the bridge did hold! But if things had gone wrong,

we would have been stuck for the night as the road apparently was little used, at least we saw no one on the trip in or back through the heavily wooded area.

1063.0. We reach the mine (5 miles in and not 6) but there are others in the area, we learned later. The mine is on the flank of a steep ridge. We had only about ½ hour of daylight left and so we both headed for the dump, about 300 feet away (to the right) and about 100 feet above the road. The mine seemed to be shut down or abandoned as we saw no one and our efforts to enter the office, plant and other buildings (in search of the watchman or some workmen) found all doors locked. We therefore scrambled up the steep bank to the dump on top.

Although the dump was quite large, it seemed to consist almost entirely of reddish stained light gray to light buff fine grained sandstone. We could not tell if the staining was due to cinnabar or hematite and as it did not look interesting, I soon turned my attention to the nearby vertical shaft that had been sunk from a niche in the vertical rock wall. To my amazement, a tunnel led off to the right from the very top of the shaft — I never, before, saw a tunnel so located. The tunnel fascinated me and I wanted to enter it, as this was my first visit to a mercury mine. But how to enter it as the shaft was in the way? I hustled out to the dump where I remembered seeing a long badly warped plank. This plank was dragged to the shaft and after a little tustle, I managed to push one end of it across the corner of the shaft and into the tunnel. With a flashlight in one hand and a mineral hammer in the other, I slowly walked across the narrow "bridge". The tunnel was about 6 x 6 feet in area and driven entirely through sandstone. Nothing of interest was seen in the tunnel, and after penetrating about 200 feet, where an underground inclined shaft barred further advance, I turned and retraced my steps outward.

On emerging from the tunnel, I found it was quite dark and it was some minutes before I could find Don as he was nowheres on the waste dump. Finally I spotted him at the ore dump of the crushing plant. He was so engrossed in breaking up rock as not to hear me until I was right alongside of him. He had found a chunk of sandstone containing tiny cinnabar crystals which would make excellent micromounts, and these he was collecting. I picked up a few pieces of sandstone which turned out later to contain tiny crystalline masses of blood-red cinnabar; another contained tiny rock crystals.

Too bad we did not have a couple of hours of daylight as no doubt more minerals would have been collected — native mercury and stibnite have been reported from the mines. The mercury mines of Arkansas were discovered during the summer of 1931 and created considerable interest (see "New Quicksilver Discoveries", by W. M. Weigel, *Engineering and Mining Journal,* Dec. 14, 1931, pp. 495-497).

On the way back to the car, I ran across a pile of dark green rock which contained large plates and crystals of black biotite— some of the crystals were 1 x 1½ inches in size. This rock did not look "local" and may have been brought in. The pile was near a building which we took to be the laboratory.

1068.0. Main road again (Ark. 27). We turned right.

1077.0. Murfreesboro, Ark., a small town of about 1,000 pop. and county seat of Pike County. Here we spent the night, registering at Hotel Conway, a nice little place, with a good dining room, for the size of the town.

Before retiring for the night, Don and I took a walk through the small business section of the town. This was laid out in the form of a square, with the courthouse in the center; the hotel was in one corner. A historical sign, relative to the diamond mines in the vicinity, was noted at the courthouse.

Back at the hotel, we noticed some minerals in a case among which were very good cinnabars from the mines near Kirby; we tried to buy one or two cinnabars but they were not for sale. (Later

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WORLD NEWS ON MINERAL OCCURRENCES

Alabama: In the gravel pits at Montgomery the Capitol City of Alabama, very nice gem quality quartz pebbles are found. These include black basanite (touchstone) and brown jasper, both of which can take a good polish. The occurrence is reported by Mrs. Rena Allen, Daytona Beach, Fla., who sent specimens along with the report to *Rocks and Minerals.*

Arizona: An abandoned gold mine which once produced nice specimens of native gold is the Sunrise Relief mine. Mr. Arthur L. Flagg, of Phoenix, Ariz., has very kindly sent in the following notes on the mine.

"The Sunrise Relief Mine is located in Maricopa County, just a few miles north of Peoria, a small town northwest of Phoenix about 13 miles by road. Driving over Hwy. 60-70-89 out of Phoenix the mine can be seen if one knows just where to look for it. Originally it was known as the Relief Mine. I don't know when it was first opened but I stumbled onto it by accident about 22 years ago while trying to locate an old road north of Phoenix. Then it was nothing but a hole in the ground with a few tumbled down buildings, some milling and mining machinery and quite a tailings pile. Later Ezra Thayer bought it for taxes and did some development work but never made any production. About 1935 a very painstaking examination was made by a very competent geologist. The average value of any milling ore so far disclosed is too low to be profitable. The values are very irregularly distributed. The gold appears in the grano-diorite without any quartz gangue and very flashy specimens can be found here and there. However, the gold is thin and an assay does not show it to be as good as it looks. The property has been idle for a number of years since Thayer attempted to rehabilitate it. I think it has passed from the Thayer estate."

Very attractive specimens of radiating molybdenite in quartz and feldspar occurs in the Squaw Peak Copper Mine near Camp Verde, Ariz. As far as we can recall, this is the first time that radiating molybdenite has been brought to our attention. An interesting article on the mine and its minerals has been received from Mr. Edison Thacker, president of the company, which we hope to print in the next issue of *Rocks and Minerals.*

Arkansas: An odd gem mineral is the extra hard red orbicular bauxite which is found at Bauxite, near Benton, Ark. This type of bauxite takes a nice polish and its orbicular structure furnishes pleasing designs. Bauxite is the chief ore of aluminum and the deposits at Bauxite have been mined for years; the mineral is generally soft and earthy but some of the Arkansas material is unique for its hardness.

California: Crestmore is California's greatest mineral locality. To date 112 minerals (not including a number of new and as yet incompletely described species) are recorded from the limestone quarries of this famous locality. Nine new species crestmoreite, ellestadite, foshagite, jurupaite, merwinite, plazolite, riversideite, tilleyite, and wilkeite — were discovered here. Crestmore, near Riverside (in N. W. Riverside County) is 50 miles east of Los Angeles. (*Minerals of Calif.,* Bull. 136, San Francisco, 1948, p. 23).

Colorado: A locality for fine crystals of black tourmaline is the summit of Wilkerson Pass, near South Park, Park County, Colo. Near this locality is another and older locality for the mineral that had been worked in 1877 by Rev. R. T. Cross, but whose diggings, apparently, have been lost.

Connecticut: The old abandoned copper mine north of Bristol, Conn., used to produce some of the finest crystals of chalcocite in America—drawings of these crystals have been used to illustrate textbooks. Though these fine crystals are no longer available, except when old collections are sold, a visit to the mine might uncover a small specimen if the old dumps are searched carefully. A recent visit to the locality by a New York collector resulted in the finding of azurite,

bornite, calcite, chalcocite (tiny crystals), malachite, molybdenite, and sphalerite. These were not good specimens but it shows what can yet be found at the old mine.

Delaware: The state's greatest locality is the old Hubbard (Brandywine) quarry in Wilmington, the largest city. Seventeen minerals have been found here including a new specie, canbyite. The rock quarried is gabbro and the huge old quarry is a quarter-mile northwest of the B&O R. R. bridge on Brandywine Creek. The locality has been described by Dr. A. C. Hawkins — "Some minerals of Delaware", *Rocks and Minerals,* Nov. 1936, pp. 216-217.

Florida: A locality which is new to collectors is the Crystal River limestone quarry in western Forida. This is a large quarry and out of it have come some nice calcite specimens. Some of the calcite is white and drusy on grayish fossiliferous (coral) limestone; some is very coarse crystalline and often banded (almost an onyx); some is grayish, stalactitic; but the most interesting are the crystallized groups of colorless calcite. The quarry was recently visited by Mrs. Rena Allen, of Daytona Beach, Fla., who not only sent specimens to *Rocks and Minerals,* but in addition an interesting article which we hope to print in the next issue. All the specimens received fluoresce green under the Mineralight and phosphoresce bluish-white. The quarry is in Crystal River, in western Citrus County.

Georgia: An interesting occurrence of native sulphur is reported in the Georgia Mineral Society *News Letter,* March-April, 1949, issue, p. 7. "Mr. Arlie E. Winn, RFD 2, Blairsville, Ga., has sent in recently a sample of pyrite which shows alteration to limonite and native sulphur. Alteration of the pyrite cubes progressed first along the cracks to produce thin cellular walls of limonite. Later crystals of sulphur were deposited on these walls, leaving the remainder of the cavity open; in other cases, small masses of pure yellow sulphur as large as a pea with massive structure are formed. This locality is reported as being in the district of Choestoe, Number 16, Union County, Georgia.— A. S. F."

Idaho: Some of the finest pyromorphite specimens now available in the country come from the Little Giant mine (lead) near Mullan, Shoshone County, Idaho. It is olive-green in color and beautifully crystallized. The locality was written-up by Charles O. Fernquist for the July, 1945, *Rocks and Minerals,* p. 312.

Illinois: The quartz geode beds near Warsaw, Ill., are famous for their fine specimens which have found their way to collections all over the world. The geodes occur in the grey limestone cliffs of the area. Good geodes are also found at Hamilton. Both localities are in Hancock County and not far from another famous geode locality at Keokuk, Iowa.

Indiana: Very nice moss agate specimens (pale brown chalcedony with black markings) have been found in the eastern part of the state, at Richmond. From specimens seen, it is apparent that the mineral has been found as pebbles in gravel deposits.

Iowa: A big boulder in a field at Buffalo Center, Winnebago County, northern Iowa, was found to contain green radiating bladed crystals of actinolite (amphibole). A nice specimen of the find was sent *Rocks and Minerals* by Mrs. Paul A. Bens, Box 664, Aberdeen, S. D.

Kansas: Some of the most interesting crystals and crystallized galena known, occur in the lead-zinc mines of Baxter Springs, Kans.

Barite "roses", similar to those found in Oklahoma, occur in a crushed stone quarry near Salina, Kans. They vary from tiny "marbles" up to 2 inches in diameter ("golf balls"). A number of these specimens have been sent *Rocks and Minerals,* by D. E. Wells, of Salina.

Kentucky: Optical fluorite (colorless, gem quality) occurs at the Chinn Calcite Mine, Mundy's Landing, Mercer Co., Ky. Groups of almost colorless cubes occur at the Babb Fluorite Mine, near Salem, Livingston Co., Ky.

Louisiana: Nice limonite geodes up to 3" or more in diameter, are found in the soil near Caddo Lake, Caddo Parish, La.

The exterior is yellowish to grayish brown while the interior is often dark reddish hematite.

Maine: There is a Jasper Beach in Maine that has been named for the large amount of jaspers which are found on it. The jaspers are dark brown (some yellow, also red) in color and take an excellent polish. Jasper Beach is near Machias Port in S.E. Maine. Collectors desiring to visit the locality should inquire for directions in Machias Port, as Jasper Beach is well known locally.

Maryland: Gem quality williamsite is still to be found at the old abandoned Low's Chrome Mine, near Rock Springs, Cecil Co., Md. The mine is also known as the Line Pits because the pits are located close to or on the Maryland-Pennsylvania line. Williamsite is an apple-green, translucent, massive lamellar variety of serpentine which takes an excellent polish and has been used in jewelry and as an ornamental stone. It is Maryland's most attractive gem stone. It owes its color to slight traces of nickel and was named after L. W. Williams who first discovered the mineral in his chrome mine near Texas, Lancaster Co., Penn., not many miles away from Low's. Rock Springs is a tiny hamlet on US 222, only ½ mile south of the Pennsylvania line.

Massachusetts: The old abandoned iron mine at Hawley, Mass., still produces nice specimens. A recent visit to the locality by Bill Yates, a senior at Williams College, Williamstown, Mass., verified this. The mine is famous for its micaceous hematite. A beautiful specimen of lustrous dark gray micaceous hematite from the locality was sent to *Rocks and Minerals* by Mr. Yates along with beautiful sea-green foliated masses of talc from an occurrence near the eastern entrance to the famous Hoosac Tunnel (B.&A. R. R.), and nice green platy crystals of actinolite from a contact limestone and intrusion deposit at Hinsdale. These three localities are all in the western part of the state and were visited by Mr. Yates during the past winter.

Michigan: A unique gem stone of Michigan is jasper conglomerate which is found in many sections of the state. The conglomerate consists of bright to dark red jasper mixed with white quartz pebbles in a mixture of white quartzite. Jasper conglomerate takes a beautiful polish and makes very attractive specimens. One locality for very fine specimens is Bay View, one mile north of Petosky, Emmet Co., Mich.

Minnesota: Howard E. Jackson, of Moose Lake, Minn., announces the finding of a large thomsonite specimen near Grand Marais, Minn., 1⅛ x 1¾ inches in size. In a letter dated Feb. 4, 1949, he writes: "The thomsonite is found along the north shore of Lake Superior in a strip about 1½ miles long and the average stone is about ½ inch in diameter. The matrix in which they are found is very hard while underground but weathers away with the rain and frost, releasing the stones. Good thomsonites are hard to get as only about 1 in 20 can be removed from the matrix without breaking. On my first trip to the locality I secured 70 stones, the largest was about ⅝ inch in diam., in 8 hours work. The largest stone I recently secured is a shell pink with fawn colored markings, the radiations from the eye are about two shades lighter than the body of the stone."

Two good photos showing the exact size of the thomsonite, accompanied Mr. Jackson's letter.

Thomsonite from the locality takes a beautiful polish and is Minnesota's unique gem stone. An interesting article on the locality, "Minnesota's Thomsonite Beach", by F. B. Hanley, appeared in the Dec. 1939, *Rocks and Minerals,* pp. 371-376.

Mississippi: Nice specimens of yellowish colored petrified wood have been found in southern Mississippi by Waldo E. Ford, of Wesson, Miss. The locality is Walter Ferris gravel pit in Lincoln County, about 4 miles east of Wesson. Interesting specimens, but not attractive, of brownish petrified wood, occur in the Stronghope neighborhood of Copiah County. Specimens from both localities were sent *Rocks and Minerals* by Mr. Ford.

Missouri: Attractive specimens of stalactitic marcasite occur in the lead mines at Aurora, Lawrence Co., of S. E. Missouri.

Montana: Very good specimens of thundereggs consisting of dark reddish chalcedony with blue agate centers occur at Avon, Powell Co., Mont. These when polished make attractive specimens.

Nebraska An odd combination consisting of amber-colored selenite crystals imbedded in rough cellular pale bluish chalcedony, occurs at Hay Springs, Sheridan Co., Nebr.

Nevada: Luning, Mineral Co., Nev., is a locality for 3 minerals which are found in very good specimens — axinite (large brownish crystals and crystal masses), scorodite (greenish-blue masses), and zoisite var. thulite (pale pinkish masses).

New Hampshire: Another new mineral for the state is ludlamite, a hydrous iron phosphate (bright green in color). The mineral has been found in crystals in small veins and in large masses in triphyllite at the Palermo feldspar mine, North Groton, Grafton Co., N. H. An interesting article on the mineral and its occurrence appeared in the Jan.-Feb., 1949, *American Mineralogist,* "Ludlamite from the Palermo Mine, North Groton, New Hampshire", by C. W. Wolfe, pp.94-97. (Dr. Walter F. Hunt, Univ. of Mich., Ann Arbor, Mich., is the Editor of the Am. Min.).

New Jersey: A new occurrence for cachalong (opal) in New Jersey is in a small road excavation near Delmont, Cumberland Co., in the southern part of the state. The mineral occurs as one inch grayish-white pebbles.

New Mexico: A new occurrence for massive topaz is in the Organ Mts., E. Dona Ana Co., N. Mex. The mineral is white in color. A nice specimen was sent *Rocks and Minerals* by the finder but efforts to obtain information on the occurrence have not been successful.

New York: A new occurrence for allanite and zircon in New York has been found by Dr. H. J. Swann, of Pawling, N. Y. The locality is a granite dike on the north shore of Ballard Lake in S. E. Dutchess County, not far from Pawling. We expect to print in the near future an article on the occurrence

North Carolina: A little over a year ago when John O. Griesbach, of Duluth, Minn., was in the Marine Corps and stationed at Camp Lejeune, he sent *Rocks and Minerals* a number of specimens from the area one of which was a nice vivianite. The mineral occurred as small, bluish, radiating crystals in cavities of dark brown limonite (bog ore) which was found on Onslow Beach, Camp Lejeune, Onslow Co., N. C.

North Dakota: Mrs. Paul A. Bens, of Aberdeen, S. D., sent *Rocks and Minerals* a nice ammonite (fossil) specimen whose exterior surface shows a play of colors; the interior is lined with drusy golden calcite. This ½ inch fossil is imbedded in a dark grayish-green marl and the specimen was found at Linton, Emmons Co., N. D.

Ohio: A locality for fossil lovers are the marl pits of East Liberty, Logan Co., Ohio, where fossil corals of many types are to be found. Specimens sent *Rocks and Minerals* by Mrs. F. A. Armstrong, 220 E. Chillicothe Ave., Bellefontaine, Ohio, included a loose 3" fossil coral and a 3x3" brownish marl containing fossils of many types—rounded, elongated, etc. In the East Liberty Stone Quarry, tiny colorless rhombohedral calcite crystals occur on dark gray limestone.

Oklahoma: In the gravel pits just west of Fay, Dewey Co., Okla., loose, platy, brownish chalcedony pseudomorph after aragonite crystals have been found.

Oregon: A locality for fine pyrite cubes is in the vicinity of Klamath Falls, Ore., where the mineral was first found, many years ago, during the digging of the Klamath irrigation canal. A second occurrence was found about 2 miles south of east of the canal locality, during the digging of a well. In both cases the crystals were found in volcanic ash. Both these occurrences were described in the Feb. 1949, *The Mineralogist* (329 S.E. 32nd Ave., Portland 15, Ore.

Pennsylvania: A new occurrence for vivianite in Pennsylvania is a large shale

quarry just west of Penn., 16, in Adams Co., in the southern part of the state. The locality is the Jameson quarry (1.3 miles north of the Penn.-Md. line) and the vivianite occurs as bluish, earthy, incrustations on dark reddish shale. The vivianite is easily seen as it is plentiful and is the only bluish mineral present in the quarry which is so close to the road as to almost border it.

Rhode Island: An interesting occurrence for staurolite is on the N. W. shore of Conianicut Island (Jamestown Township), Newport Co., R. I., where the mineral is found as small dark brown crystals with small red garnet (almandite) crystals in dark gray mica schist.

South Carolina: In the pegmatite area near Iva, Anderson Co., S. C., nice greenish gem quality aquamarine (beryl) crystals have been found.

South Dakota: Very nice masses of dark brown petrified wood from Lemmon, Perkins Co., S. D., have been sent *Rocks and Minerals* by Mrs. Paul A. Bens, of Aberdeen, S. D.

Tennessee: Ducktown, Polk Co., (in the extreme S. E. corner of the state) is Tennessee's greatest mineral locality. In the copper mines at Ducktown over 36 minerals have been found. Although native copper is rare, nice sheets, masses, small veins, etc., have been found.

Texas: The state is noted for its celestite occurrences and an unusually fine specimen, pale bluish, compact-fibrous, was sent *Rocks and Minerals* by Dr. T. R. Havins, of Brownwood, Texas. The specimen comes from the Bettis farm, 3 miles south of Blanket, Brown Co., Texas.

Utah: A new occurrence for siliceous oolite (quartz) is Salina Canyon, Sevier Co., Utah. Two specimens were picked up by a state road engineer at a spot about 12 miles up the canyon from the town of Salina. One of these specimens was given to Dr. A. L. Inglesby, of Torrey, Utah, who sliced it in two, sending one slice to *Rocks and Minerals*. ..The slice received is a thin slab, 2x2¼ inches in size, and consists of white oolites in brown chalcedony.

Vermont: We do not think of Vermont as being a gold mining state but the precious metal occurs there and has been mined. One occurrence is at Plymouth, Windsor Co., where the placer workings date back to 1880. During the summer of 1947, H. L. Chandler, of Springfield, Vt., panned some of the gold and was kind enough to donate a little of it to *Rocks and Minerals*.

Virginia: What is believed to be the only known occurrence in the world of crystallized turquoise, is an old copper prospect near Lynch Station, Campbell Co., Va. A few years ago Mr. C. H. Robinson, Sr., of Puyallup, Wash. who at that time resided in Washington, D. C., prospected the dumps carefully and succeeded in finding a number of choice specimens, one of which was sent to *Rocks and Minerals*.

Washington: One of the many localities for fine agates in the state is Red Top Mt., in Kittitas Co. (central Washington). The blue agates of this locality are famous for their fine quality. Mr. C. H. Robinson, Sr., of Puyallup, Wash., has written a most interesting article covering a recent trip he made to the locality and this will be published in an early issue of *Rocks and Minerals*. Incidently Mr. Robinson sent *Rocks and Minerals* a large number of fine specimens from the locality just to back up the mountain's reputation.

West Virginia: At Sweetsprings, Monroe Co., psilomelane, in black nodular masses, occurs in a residual clay produced by the weathering of sandstone and limestone. As the mineral is plentiful, it has been mined as an ore of manganese. Some unusually fine nodular masses have been found at the locality.

Wisconsin: Two nice red jasper pebbles, each 1" in diameter, from the Mississippi River bed 2 miles south of La Crosse, La Crosse Co., Wisc., have been sent *Rocks and Minerals* by Miss Alta Beebe, of Coon Valley, Wisc. Nice dark brown jaspers occur also at the locality.

Wyoming: The Long Creek jade deposit, located a few miles north of the junction of Long Creek with the Sweetwater River, Fremont Co., Wyo., was de-

scribed by Harrison S. Cobb in the Jan. 1949, issue of *The Mineralogist* (Portland, Ore.). Wyoming is famous for its jade occurrences which produce very fine gem material in masses weighing hundreds of pounds. An early reference to jade in Wyoming appeared in the July, 1939, issue of *Rocks and Minerals* titled "Nephrite in Wyoming", pp. 210-211.

Alaska: The Aleutian Islands of Alaska contain many agates and jaspers, we have been advised by Emil Tweit, of Homestead, Fla., who spent many months up in that region. Adak Island has lots of jaspers which are found chiefly on the north and northeastern coast, where they occur in lava. He saw one huge red jasper mass that must have weighed a ton (2,000 lbs.,); it was loose but from its ragged edges it must have become detached from a lava bed. On Unalaska Island, he found blue gray and smoky gray agates with distinct banding; also red jasper. All of these occurred as loose pebbles along the coast (all around the island) and also along the edges of craters. Coal-black masses and pebbles of obsidian (known locally as "black diamonds"), are found close to Dutch Harbor on Unalaska; these have been cut for jewelry.

Canada: An interesting occurrence of amber is in the Province of Manitoba where the mineral occurs as small pebbles in gravel and sand along the shore of Cedar Lake.

Egypt: Dr. Claude H. Barlow, of Cairo, Egypt, informs *Rocks and Minerals* that the ancient workings at Alabastron (near Thebes), Egypt, have been recently reopened. These are the workings where alabaster was first found in the world and which gave the mineral its name.

Mexico: The Santin Mine at Santa Catarina, Guanajuato, Mexico, furnishes collectors with unusual stalactitic forms (brownish color) of cassiterite with stalactites up to 2" long that often are partly coated with white silica.

Some of the finest apatite crystals known, greenish-yellow, transparent, and often over an inch in length, occur in the iron mines of Cerro de Mercado (Iron Mt.), Durango, Mexico; many of these crystals have been cut and facetted to make beautiful gems. A most interesting article on the locality, "Collecting apatite crystals at Durango, Mexico", by Louis W. Vance, will appear in an early issue of *Rocks and Minerals*.

Editor's Note: This will be a regular feature of *Rocks and Minerals* from now on and we would appreciate notes on mineral occurrences from readers. Notes on new finds are especially desired. And if you like this feature, drop us a card saying so, as we would like to know our readers' reactions.

SYDNEY H. BALL
(Obit. Notice)

Sydney H. Ball, a mining geologist and an authority on precious stones, died on Fri., April 8, 1949, of a heart attack at his home at 829 Park Ave., New York City. His Age was 71.

Born in Chicago on Dec. 11, 1877, he attended the University of Wisconsin where he specialized in geology and engineering.

In 1907 he became the technical head of an expedition to survey the mineral concessions in the Belgian Congo of Africa and the Belgian Congo — Angola diamond field, said to be one of the largest in the world in point of production was an outgrowth of this expedition.

For a number of years Mr. Ball contributed the chapter of gem stones to the U.S. Bureau of Mines Minerals Yearbook and it was this work which made him well known to mineral collectors.

From 1917 until the time of his death, he was a member of the firm of Rogers, Mayer & Ball, consulting geologists.

Surviving is a daughter, Mary Virginia Ball. His Wife, Mrs. Mary Ainslie Ball, died in 1945.

Ad Brings Results!

Editor R & M:

I want to let you know the results of my first ad in *Rocks and Minerals*. I would never have believed that two pages announcing my opening would have brought me

223 letters bringing me orders.
106 letters asking for information.
62 letters of congratulations from old friends and clients.
43 visits of clients that I had not seen for years, nearly all buying something.
37 visits of new customers.

I am very, very satisfield for what *Rocks and Minerals* did for my enterprize and if you want to print this letter by all means do it.

Maurice A. Hamonneau, Mgr.
East Coast Mineral Corp.,
New York City.

April 18, 1949.

AUSTRALIA'S BENTONITE AIDS SECONDARY INDUSTRY

Ample Deposits of Mineral with Diversity of Uses

By CHARLES LYNCH

Developments in the utilization of bentonite in Australia, which have been most marked since the end of World War II, draw attention to its possibilitites for industrial purposes in other countries.

With wartime shortages of shipping and the difficulty of obtaining supplies from America, Australia was forced to develop her own considerable deposits, and the locally produced mineral is now in use by the nation's expanding secondary industry in foundaries, oil refineries, and other industrial establishments.

The United States of America is the world's principal producer of bentonite and sub-bentonite or Fuller's Earth, which is also a purifying agent, and is often found adjacent to bentonite deposits.

Australia's known deposits of bentonite and sub-bentonite are in the States of Queensland, New South Wales, Victoria and Western Australia.

The Queensland deposits are mined at Yarraman, 126 miles north-west of Brisbane. The mining is carried out by drives and cross-cuts from a vertical shaft, fitted with a windlass. The bentonite is hand-picked, air dried on the surface, and bagged for shipment as first-grade bentonite.

The deposit is estimated to contain 28,000 tons and there are also 122,000 tons of bentonite white clay in the vicinity.

The next deposit of importance is at Marchagee, 150 miles by rail north of Perth, capital of Western Australia.

It is estimated that the deposit contains about 3000 tons of bentonite, and the product has been in popular use in foundries of Western Australia.

Australia has been producing the mineral for only 11 years. To the end of 1945 production amounted to 1,157 tons from Yarraman, 516 tons from Marchagee, and 562 tons from Trida, Western New South Wales.

Fuller's Earth, to the total of 1,601 tons, has been produced at Dubbo, New South Wales, from 1911 to 1945, and small quantities have also been obtained from Mudgee, New South Wales.

The two varieties of bentonite, known as swelling and non-swelling, have now many uses in Australian industry, and many bentonites, intermediate in type, may be used as a swelling or non-swelling product.

Swelling bentonites are used mainly as bonding agents in foundry moulding sands in Australia. Their bonding qualities are much greater than any other similarly used material, and hence smaller quantities are required. They allow increased pore space between the grain sands in the mould, thus allowing steam and other gases to escape during the pouring of the metal.

Bentonite is suitable for sealing porous substances and for this reason dams, earthworks and excavations are treated with it to prevent leakage or seepage of water. Where the ground is friable, bentonite is often used to prevent the walls of a hole from giving in and it obviates the easing of the walls with metal piping. Other uses for the swelling variety are for the de-inking of newsprint and the clarification of wine, as bonding materials in the ceramic industry, and as a spreader and adherent in insecticides and horticultural sprays. It is also useful in clearing turbid water, for purifying sewerage, for dewatering wood pulp, and as an emulsifying agent is asphalt.

The non-swelling bentonite, an activated clay, is utilized for the cleaning and clarification of mineral, vegetable and animal oils. The clarification is primarily concerned with the removal of color, but also includes the removal of impurities such as carbon, the removal of smell and the increase of viscosity.

Fuller's Earth is used in the process of petrol refining, in which its chief function is to remove the color and impurities from refining oils. It also eliminates the sludge and carbon content, acidity and viscosity. It reduces the germ content of, and stabilizes naptha, and clarifies and removes odour and taste from vegetable and animal oils, fats and grease.

The bentonite clay from the State of Western Australia is processed in the capital cities of Melbourne and Sydney, and sold to local foundries. Some of the local products are beneficiated by removal of sand, and blended with equal parts of American bentonite. Some mineral dealers market the unblended Australian clay, however.

Clay from Dubbo in New South Wales is sold after activation as Fuller's Earth.

The wide variety of uses which are being found for these mineral products augurs well for the development of Australia's considerable deposits which represent a source of supply for countries experiencing a shortage of supplies in essential materials, which are required for industrial expansion.

FOR THE BEGINNER IN MINERAL COLLECTING

By SANDY RODGERS
10 La Grange Ave., Poughkeepsie, N. Y.

This article is written as an example of a young collector who made his collection successfully complete in every way. It is an example of what may lie before you, providing your interests are backed by courage and perseverance.

In October of 1944 this healthy young boy, who, at the time knew nothing about mineral collecting, was being fascinated by one of his friends in the simple wonders of a chemistry set. He showed to him the experiments he might perform, and being interested, he soon acquired a set of his own. He, too, learned how to perform these simple, amusing experiments and learned the fundamentals of chemistry in the helpful manuals that came with the set.

That very next year, 1945, he dropped his "studies" in chemistry and turned to mineral collecting, which his father, a mining engineer himself, introduced to him. He managed to acquire a few specimens from the same company that sold him his chemistry set, along with a manual of experiments to perform on certain rocks, and minerals. And that was how he got started.

The time rolled by, and with the help of his father and various prominent people of the mineral world with whom he had made contact, he acquired some friends who helped him toward his goal for a fine, large mineral collection. One of them was a professor of geology at a local university.

It was 1946, and it had been two years since he had started gathering knowledge for his studies in minerals. Then, a very lucky thing happened to him. A relative invited him to spend the fall of that year in South Carolina. Naturally, he accepted the invitation and had a chance to observe geological conditions there. On this trip he picked up quite a few additions to his well sized collection and also had the luck to be able to enter his collection in a local "Hobby Show", where he caught and stored opinions of other more experienced hobbyists.

1947 flew in and saw the young collector's busiest year in mineral collecting. The number of specimens in his collection ranged in the middle hundreds, and he judged his collection to be worth about $75.00. He acquired more and more friends and correspondents who helped him immensely. He earned enough money to buy some books on geology, and soon learned his collection might profit enormously if he exchanged his surplus specimens with other collectors. He made a neat catalog of his minerals, arranging them in such an order that he might be able to find any information about any one specimen in his collection.

In 1948 he acquired two nice, new cabinets for his collection out of hard earned money, and extended his collection of minerals so that he had estimated it to be worth about $125.00 of late.

So, now, in his 5th year and "Wooden Jubilee" of mineral collecting, this healthy, young boy has found something worthwhile and educational to do with his free time.

REVIEWING THE NARRAGANSETT BASIN

By ANTHONY THURSTON
U. S. Veterans Hospital, Rutland Heights, Mass.

PART I

Reasons for Review:

I have felt for some time that this forgotten and complex series of rocks has had less attention than it deserves. However, due to my own confinement in a hospital, the length of time since I have been in the field, and the lack of available literature, this paper has been put aside again and again. Recently, though, I acquired a copy of U.S.G.S. Monograph, Volume XXXIII, entitled: Geology of the Narragansett Basin, by M. S. Shaler, J. B. Woodworth and A. F. Foerste. It is with the aid of this manuscript and my own recollections of the region that this brief review is presented.

General Outline:

Geographically the basin lies between 70° 45', and 71° 30' W. Long., and 41° 30' and 42° 10' N. Lat. Roughly this covers the area enclosed by the towns of Attleboro, Mansfield, Brockton and Hanover on the north; North Plymouth, Middleboro, Fall River and the shore of the bay on the east, (all in Massachusetts); Pawtucket, Providence, Cranston and Kingston on the west (all in Rhode Island). The southern extent is unknown since all the islands in the bay are underlain by these rocks except the southern tip of Aquidneck (also called Rhode Island) where older strata is exposed. It is assumed, however, that since a marginal arkose is exposed here that the southern limit is not far distant. Also, since the coarsest sediments are in this section, it is believed that a landmass undergoing erosion was in this direction. Thus the area under examination spans the Narragansett Bay and extends northward into Massachusetts with a gentle curve to the northeast in its northern half. A small arc of strata, narrowly joined to the northwest corner where the easterly curve begins is called the Norfolk basin, and would appear to be a small erosion remnant set off by folding.

The region has been eroded by the glacier and as a rule the southern half lies from one to two hundred feet lower than the crystalline uplands due to the abrasion. It does not form a distinct valley, however, for there are numerous irregular highlands of sedimentary strata which rise nearly as high as the surrounding hills. It is typical of Southern New England, having an abundance of glacial till, numerous swamps and small ponds, which obscure much of the underlying rock. Large stretches of the northern limits are so deeply buried that the boundary is determined only by the shale fragments found loose in the soil.

It is for the most part a land of small farms, except where underlain by the Dighton Conglomerate which usually outcrops as numerous, barren, glaciated knobs jutting out of the fields and woods. In these places it is nearly impossible to work the soil and if it has any value at all it is usually that of firewood, for white oak and other trees of little value flourish among the rocks.

The area is drained by a dendritic network of streams which are apparently subsequent for they show little regard for the strata. In fact it is only rarely that they reach bedrock. One of these which I recall, flows, directly across a mile or more of the hard conglomerate, yet at only one place is it actually in contact with the rock On the other hand, the tidal estuaries occupied by the Taunton, Coles, Lees, Kickamuett, Palmer, and Seekonk Rivers are over softer shales which had been more deeply eroded by the glacier. The island of Aquidneck seems to be a remnant which has withstood erosion as a result of a cap of conglomerate and sandstone which extends almost the entire length. Neither Jamestown or Prudence Islands, however, show any structure to explain their presence.

The principal rocks are carboniferous shales, sandstones, and conglomerate with, in places, a basal arkose. In addition to this, there are small patches of Cambrian sediments exposed at Newport and Saconnet, R. I., and North Attleboro, Mass.

On the western border, and near North Attleboro, the Carboniferous is penetrated by small igneous intrusions.

Resources:

Coal has been mined at various points over the years. One mine, probably the largest, is in the city of Cranston where the buildings are still standing. Another, in Portsmouth, was worked off and on for some time, but at present only the dumps, shaft and fallen walls of the buildings can be seen. Two small excavations were started at one time in Mansfield but I believe little of value was found. Another of little importance lies near the Blackstone River in Pawtucket, but I have never been able to find its exact location. Various other test holes have been started all over the basin but the coal is of such poor quality and in such thin seams that it is not worth working.

On a small island near Newport, called Little Limerock, and at Attleboro small deposits of lime have been found and worked locally, but are of no commercial value since there are several workable de-

SKETCH OF NARRAGANSETT BASIN
(Parts of Rhode Island and Massachusetts)

posits just beyond the western border.

Some black shale is being quarried in Plainville but for what purpose I do not know.

By far the greatest natural resource yet developed is not in the Carboniferous rocks but in the overlying mantle of glacial drift which is worked extensively for sand and gravel for use as an ingredient in concrete.

PART II

Basement rocks:

For the most part the Carboniferous strata rests on a hornblende granite floor of Pre-Paleozoic age. Local exceptions to this are to be found at a few places where the Cambrian crops out. These, however, are believed to be only erosion remnants and do not extend far under the basin. The small igneous rocks in the northwest corner, whose exact relationship is doubtful, will be considered as post-Carboniferous.

Cambrian rocks:

A rather thick mass of crumpled strata, known as the Blackstone series, borders the basin at Pawtucket. It is composed of limestones, schists, slates, and quartzites injected with granite intrusions which almost equal in volume the mass of sediments. Another small patch of Cambrian crops out on Hoppin Hill in North Attleboro, where a few fossils have been found in boulders of shale and sandstone. Shales and thin beds of limestone are also found on Newport Neck and in Little Compton, but since no fossils have yet been found in them, they cannot be definitely described as Cambrian. They are almost certainly pre-Carboniferous since the lime indicates a salt water origin while the later sediments are fresh. Then, too, an unconformity almost certainly exists between the two rocks.

Pennsylvania Rocks:

The Carboniferous of the basin belongs to the Upper Pennsylvanian and begin with a basal arkose just above the granite floor. It has been found along the margin wherever the granite rises steeply to the uplands such as on the western border in Cranston and Kingston, on the east in Fall River and Tiverton, and in one or two isolated spots in Newport. It is up to 100 feet thick and is apparently the detrital material which accumulated under aerial erosion prior to an uplift which gave the streams sufficient velocity to carry it away. It was then deposited as alluvial fans at the base of the hills. Whether or not it is continuous over the floor of the basin is not known. If it is, it is probably a very thin layer. One of the better exposures of this is at Steep Brook at the north end of Fall River where it appears in the stream bed.

Above this, in the Attleboro area, are the Wamsutta beds composed of red shales, slates and conglomerates to the extent of 1000 feet. These are the only red beds in the basin and are traceable only as far south as Providence. Eastward they thin rapidly along the border and dip beneath younger strata toward the interior. They do not reappear in any of the anticlines and it is assumed that they die out. The reasons for the red color has not been definitely determined but is probably due to the presence of one or more volcanoes in the region in Carboniferous times. Pebbles of arkose, felsite, and felsite breccia are included in the sediments which would indicate a disturbance of some sort.

Over the rest of the basin the Kingston series consisting of conglomerates, shales, sandstones and coal seams form the equivalent of the Wamsutta beds. These have a thickness of up to 10,000 feet and form the bulk of the Carboniferous rocks. They are not greatly metamorphosed over most of the region but the conglomerate pebbles become quite flattened south of Fall River and the shales are sometimes penetrated by quartz veins, as on Brayton Point in Somerset. I believe that although there is little alteration in most places, the lower parts of these beds are injected with irregular igneous intrusions. Some time ago I found a bed of steatite in the town of Swansea at least ten miles from known post-Carboniferous intrusions, indicating that a dike or sill cannot be too far below.

The coal beds of Kingston are quite extensive and may extend at depth over

the whole region, but are undependable and often too thin to be worked. They vary greatly in thickness and number. Thick seams in the Cranston and Portsmouth mines often pinch out within a few feet or narrow to very thin layers due to crushing in the folds. At best they are shaly, and when used, the coal has a tendency to form clinkers in burning.

Above the Kingston and resting in the synclines, is the Dighton Group consisting of 1,000 to 1,500 feet of coarse conglomerates and sandstones. One of these lies between Taunton and Providence, and another between Dighton and Swansea. There are also two small areas on Aquidneck Island and a portion of a forth on the mainland in Tiverton. There are no coal seams in this group, although it may be shaly or fossiliferous in small spots.

PART III

Post Pennsylvanian Rocks:

There are no consolidated sediments above the Pennsylvanian in this district except the eruptives which have been intruded along the margin.

In Plympton, on the supposed boundary of the basin, there is a dike of felsite which is believed to have flowed out during or after the Carboniferous. The exact contact though has not been definitely ascertained. Another igneous area is located in Kingston where pegmatite granite can be seen intruding the shales at several points along the shore.

By far the most interesting, however, are the dikes and bosses in the northwest corner of the basin. Here we find a series of quartz-porphyry, diabase and felsite rocks which parallel a fold about Hoppin Hill. One of these at the end of the left prong of the horseshoe, called Diamond Hill, is a source of many quartz encrusted stones used locally in rock gardens and cement walls. The crystals, however, are short and usually show only the terminations. This is believed by some to be the site of a hot spring following volcanic activity. Some felsite in this loop shows definite flow structure and a few of the gray sandstones interbedded between the red shales are interpreted as ash beds. All of which would indicate one or more volcanoes in the area at about this time.

Metamorphism:

There has been extensive metamorphism from Wickford to Providence along the western border due to the pegmatite intrusions but over the rest of the region there is only small amount of alteration. Fossils are not greatly distorted, although in some places a slaty cleavage intersects the bedding at an angle of about 30°. Pebbles in the conglomerate are sometimes elongated, but it is not an overall characteristic and most of them show no change.

Folding:

The whole series has been thrown into steep anticlines and synclines, some of which have been overturned. In the main these folds run north or northeast following the general trend of the basin. One exception to this is the horseshoe fold which is warped about the base of Hoppin Hill in North Attleboro. Due to the amount of water over the southern half of the area, and the deep drift over the rest, outcrops are lacking where most needed so that much of the folding has not been well worked out. The larger folds, however, are indicated by the hard Dighton conglomerate and by its presence shows the main axis of structure.

Faults:

There are undoubtedly a great many faults in the basins which have not been found, for an area which has undergone such severe crushing must have given way at numerous places. To my knowledge, though, none of them has been observed directly. They are obvious, however, by the displacement they show either along the margin or sudden changes in strata. The Norfolk basin is quite obviously offset by a fault and the sharp turns in the boundary at several places along the northern side are best explained by faults. Also in North Attleboro the presence of a block of the Kingston jutting into the Wamsutta is interpreted as a thrust which has overridden the latter. On Aquidneck there are faults bounding a small mass of

diabase which is thrust up into a syncline of Dighton Conglomerate. Another is inferred by the very narrow width of the Kingston between the Dighton and basal arkose in Tiverton.

Fossils:

Cambrian fossils have been found in place and in boulders on Hoppin Hill as fragments of trilobites and shells. Other shell casts have been found at various places in the quartzite pebbles inclosed in the Pennsylvanian Conglomerates and in pebbles weathered out of them. This would indicate that at least part of the sediments are derived from the erosion of Cambrian rocks nearby.

Pennsylvanian:

Fossils of the coal age are common in numerous places throughout the area. Almost any exposure may contain some plant fragments but as a rule the dark, shaly rocks more often contain fossils. Only a few locations need be mentioned. The quarry in Plainville, Mansfield mine, Seekonk, Cranston mines, Portsmouth mines, Swansea, Somerset, and Tiverton, all have yielded a variety of plants. Most common are the remains of ferns, Calamites, Lepidodendron, Sigillaria. and Annularia. On one occasion I found a peculiar fossil much like a fungus growth and others have reported a few insect wings. Several are on record from Pawtucket. No marine fossils have ever been found but ripple marks are often seen on the bedding planes of the sandstone.

Future of the basin:

Coal. There is a possibility that in time to come coal of Rhode Island and Massachusetts may be mined, if and when, deposits in other parts of the country become depleted. It would be expensive and uncertain though, for the beds are usually thin, steeply inclined and extend to considerable depth. One other possibility is that the shales filled with carbon as they are, may be found useful at some future date and will be broken down to make a useful fuel as is being done with some low grade oil shales.

HERBERT M. W. HAVEN
(Obituary Notice)

Herbert M. W. Haven, with eight others, founder of the Maine Mineralogical and Geological Society, and one of Maine's foremost mineralogists, died suddenly at his home in Portland, Maine, February 26, 1949. The Society will long mourn his passing. He is survived by his widow, Mrs. Florence E. Haven.

He was born in Boston, sixty-three years ago. His ancestor, Richard Haven, migrated from England to Lynn, Mass. in 1644. Thirty-four years ago he moved to Portland to establish Haven's Candy Kitchen.

A lover of nature in all forms, he belonged to societies studying mammals, birds, reptiles, fishes, rocks and minerals, natural history, astronomy, forestry and botany. He was ever seeking after new facts and induced others by his enthusiasm, to follow him, especially young people.

He had a large collection of Maine natural history specimens including ferns, flowers, snakes, skulls, stuffed animals and birds. At the time of his death, he was preparing a large collection of valuable minerals to be presented to Colby College, Waterville, Maine.

He has been directly credited with the wonderful growth of mineral clubs throughout the United States due to his Special Maine Number of *Rocks and Minerals* in 1930. On June 30, 1947, Herbert Haven was honored by receiving the degree of Master of Science from Colby College.

He was the first secretary and second president of The Maine Mineralogical and Geological Society. Serving on various committees with life and vigor, he drew interest to the Society equalled by none. New facts about minerals always were brought to the attention of all, gorgeous displays of minerals were ever appearing at the meetings, candy from his famous kitchen was given to every one on field trips and at banquets. His interest secured entertaining and instructive speakers. The personal touch was given by newsy letters from his friends.

With the passing of Herbert M. W. Haven, we lose to the Great Beyond, a student, authority, and lecturer on all phases of natural history including our rocks and minerals. May we be permitted to continue his good work. He will long be remembered for his earnest and serious work and help to others.

Ruth H. Wentworth, Cor. Sec.

Contacts Collectors!

Editor R & M:

I am sorry about the oversight in renewing subscription. This is one magazine I do not want to miss nor should any real mineral collector miss. It has helped me get into contact with some expert collectors.

M. Leonardi,
Trona, Calif.

March 23, 1949

MAJOR CLASSES OF URANIUM DEPOSITS

U. S. ATOMIC ENERGY COMMISSION
Washington 25, D. C.

Uranium composes about .0004% of the earth's crust, but it occurs very sparingly in significant concentrations. There are five major classes of uranium deposits which are being exploited now or will be exploited in the future:

1. High-grade pitchblende-radium deposits (assaying better than 1% Uranium Oxide (U_3O_8) in quantity worth mining) occuring as replacement bodies.

   Where oxidized, the ore consists of autunite, carnotite, and other oxidation products of pitchblende, many of which are brightly colored. The better known deposits of this kind are Eldorado in Canada; Shinkolobwe in the Belgian Congo (from both of which the United States obtains uranium); and Joachimstahl and other deposits in the Erzgebirge district of Czechoslovakia and Germany which, according to newspaper accounts, Russia is exploiting. Deposits of this class may contain appreciable quantities of silver, copper, or cobalt.

2. Carnotite-type and roscoelite-type vanadium-uranium ores of the Colorado Plateau. These closely related ore types are apparently important only in this country, but at best they are quite inferior to the high-grade ores as a source of uranium. These deposits occurring in flat-lying sandstones are under active development as part of the Commission's program. Ore acceptable at AEC ore purchase depots contains a minimum of 0.10%U_3O_8, and payment is made for vanadium (V_2O_5) content in a ratio not exceeding 10 parts V_2O_5 to one part U_3O_8. By-product uranium from privately-owned vanadium plants is also purchased by the Commission.

3. Gold-uranium of the Witwatersrand, South Africa. Public announcement has been made of the ocurrence of uranium as a very minor constituent of the gold-bearing Witwatersrand conglomerate. The prospect exists of future by-product uranium from the great gold mining industry of the Union of South Africa. The Commission, through the U.S. Geological Survey, has been systematically examining all of the mill and smelter products in this country to discover if similar by-product possibilities exist here.

4. Uranium-bearing oil shales and other marine sediments. It has long been known that certain oil shales and other marine sediments, including phosphatic beds, contain very small quantities of uranium. Sweden for example, has announced that she is building a small atomic pile and intends to derive uranium from her oil shales to feed this pile. According to published statements Swedish shale deposists containing many millions of tons of "ore" run around 0.02% U_3O_8. (These same geological formations extend northeastward up through Estonia and Leningrad.) By-product uranium from oil shale or phosphate industries may play a part in the development of atomic energy in different parts of the world. The AEC expects to exhaust every possibility of this character in the United States.

5. Miscellaneous other deposits. Pegmatites containing small amounts of pitchblende; placers containing a little uranium (generally as thorianite) along with monazite, and other ore types of as yet minor importance.

THROUGH SCOTLAND WITH DR. IAN CAMPBELL

At the regular March meeting of the Mineralogical Society of Southern California, Monday, March 14th, 1949, in the Lecture room of the Pasadena Public Library, Dr. Ian Campbell, who is Assistant Chairman of the Division of Geological Sciences of California Institute of Technology, gave a very interesting lecture on his recent trip through Scotland, illustrating same with colored slides. His subject was "The 18th International Geological Congress". The purpose of this organization is to enable representatives from the various countries to get together every three to four years in order to compare notes and exchange ideas for the furtherance of their work. During the recent war these meetings had to be deferred. The movement for this Congress started in Paris in 1878. In 1933 it met in the United States; in 1936 Russia, and in 1948 Great Britain. It will meeet next in Algeria in 1952.

Many field trips were held in connection with this latest meeting. The two attended by Dr. Campbell were in Scotland one in the Island of Skye and the other in the West Highlands.The Island of Skye is just off the northwest coast of Scotland. Dr. Campbell commended the British very highly for their fine maps of the locations of these trips and for their mapmaking in general. He showed us colored pictures of the party boarding and sailing on the little steamer which took them from the Scottish mainland across the blue waters of the Sound of Sleat to the Island of Skye. Scotland, you understand, is the birth-place of Dr. Campbell's ancestors, who formed one of the best-known and foremost clans of all the Scottish Highlands.

He took us with his wonderful pictures through the heath and heather, up mountain and down glen, with all its wonderful scenery and picturesque villages; across the lochs and bays, its brooks and rivers, with their colorful flowers growing in profusion,and gave us a glimpse of the ancient cathedral at Elgin. The sturdy rock mansions form a striking contrast to our own flimsy wooden cottages and stu co houses. It reminded me of my own U cle Mickey Boyle: after a short visit to t United States he became so home-sick f his own Scottish Highlands that he said his friends: "To L with your woode hooses and paper blinds, and your ir box in the middle 'o the flare. (referen to our iron stoves-they have fireplaces Scotland). I'm sailin' tomorrow for t Banks and Braes 'o Bonnie Doon, a I'm saying good-bye to one and all --Go Bless you!" and away he went and he ne er came back

Olivine Sand Beach in Skye

Dr. Campbell pointed out to us in th pictures of mountains and hills, the ba altic lavas and gabbro-hybrid material which they are composed, and of picri and analcite-bearing teschenite sills in th northern part of the Island of Skye, an at one place a beach which was compose almost entirely of olivine sand or 95% thereof, which is rather unusual — thi was the beach below Duntulm Castle.

In the Black Cuillins mountain climb ing is at its best. The basic rock is a coa ser grained gabbro which weathers in th mountain tops to a rugged skyline, wit peaks in sharp relief against the back ground of the sky, while other mountain composed of granite weather to rounde and more evenly defined peaks and show a smoother skyline.

At the edge of Loch Leven is the lovel Ballachulish Hotel, quaint and picturesqu indeed to one accustomed to our own s different scenery. It made one think o warm beds of soft down, cheerful fire places, and heavy oaken tables groanin under the weight of luscious viands, fres vegetables and fruits and sparkling wine and over all the warmth of pleasant hu man companionship, love and fellowship which its mirrors know so well.

Withamite Occurrence at Glencoe

Near Ballachulish we saw in picture the marvelous slate quarries where th current bedding of the rocks has bee completely reversed by volcanic intrusion Ring dikes are prevalent in this sector o

Scotland, some of them as many as seven to ten miles in circumference — making almost a complete circle. Within these structures the rocks have dropped down, giving rise to the phenomenon of "Cauldron Subsidence". From volcanic rocks within the Glencoe Cauldron, the rare mineral, withamite, a red to yellow variety of epidote, having strong pleochroism was collected.

The Great Fault Of Scotland

Dr. Campbell pointed out to us the great fault which crosses the entire country of Scotland from southwest to northeast, forming what has long been known as "The Great Glen". In this Glen, several lochs have developed. These have been connected by means of locks and canals so that it is possible for a boat to pass from the Atlantic Ocean to the North Sea through the heart of the Highlands. The movement associated with this fault is believed to have been a rifting type, somewhat similar to that associated with the famous San Andreas Rift here in California. In Scotland, the northwestern portion of the country is believed to have moved some 50 or 60 miles southwestward, relative to the southeastern portion of the country.

I think most of the members of our Society may well be forgiven if they temporarily lost sight of the most important part of his wonderful lecture, when one thinks of the nostolgic scenery through which he took us, and your reporter asks forgiveness for the anti-climax he may have created by failure to do justice to such a wonderful talk and splendid colored views. Why don't more of us take along cameras with which to bring back pictures of our field trips? One picture is worth a thousand words, but when served up with Dr. Campbell's words, it becmes a treat we shall not soon forget. Thank you Dr. Campbell.

John A. Quinn,
Acting Publicity Chairman

CHICAGO MUSEUM NOTES

For the 41st consecutive year Stanley Field was re-elected president of Chicago Natural History Museum at the annual meeting of the board of trustees held (MONDAY, JAN. 24, 1949). All other officers who served in 1948 were re-elected. They are: Marshall Field, Chicago publisher, first vice-president; Albert B. Dick, Jr., second vice-president; Samuel Insull, Jr., third vice-president; Col. Clifford C. Gregg, director and secretary; Solomon A. Smith, treasurer, and John R. Millar, assistant secretary.

For the 22nd successive year, attendance at the Museum exceeded 1,000,000 visitors in 1948. The total number clicked in by the counters of the guards at the entrances as the year ended Dec. 31, was 1,134,643

Eighteen original letters written by the great English naturalist, Charles Darwin, to an Illinois pioneer in insect research who became a state official, have come into the possession of the Museum, it has been announced by Col. Clifford C. Gregg, director.

Invitation To Rockhounds

Editor R & M:

Enclosed is my $3.00 as renewal payment of subscription for 1949. Have been snowed in till about 2 weeks ago, hence the delay in remitting.

If any rockhound comes up this way I would be delighted to show him around. We have a wonderful collecting ground, the Bad Lands of Drumheller (not far from here). I live 5 miles north and 1 mile east off High River which is on the main Alaska Highway.

Robt. Hadden
Aldersyde, Alberta, Canada.

April 20, 1949.

Trip To Mexico

(Continued from page 253)

on arriving home, I was happy to discover in my collection a very nice 3 x 4 inch specimen of cinnabar from the Kirby mines. This fine specimen had been purchased from Mr. Byron C. Marshall and was as good if not better than the best at the hotel).

Mileage for the day — 388.

(To be continued)

HAVE YOU A TITANIA IN YOUR COLLECTION?

The Latest Synthetic Gem Is Twice As Brilliant As A Diamond

By T. ORCHARD LISLE

Recent introduction of the lovely Titania gemstone, or man-grown rutile, with its exceptionally high refractive power and splendid color dispersion, has increased the interest in synthetic jewels as a whole. Available in light straw and golden, the Titania's refractive index is substantially higher than diamond. Being tough, but fairly soft compared with the ruby and sapphire, it is in some respects an ideal stone for amateur Lapidarists to work on, for its cost in the rough boule form is very modest carat for carat with the natural mineral.

Composed of titanium oxide (rutile) under high temperature furnace conditions, its trade name Titania is derived from its composition. But it is not to be confused with that natural gemstone Titanite or Sphene, which also has a marvelous color dispersion and high refraction. There is a relationship because Titanite also contains the element titanium, hence the similar names.

The hardness of Titania is only 6 to 6.4 Mohs' scale, so diamond dust is not needed for polishing. Because of its tough characteristics it does not tend to chip when worn in jewelry in daily life. Nevetheless, if one may be privileged to sound contradictory, most amateur gem cutters are likely to have some difficulty in securing a high-quality polish in their early attempts, as this has happened to a number of the most skilled diamond cutters.

However, Linde Air Products Co., of New York, who are responsible for this most interesting gem development, have after exhaustive experimentation, produced a revised polishing formula at its Tonawanda Laboratories. From now on, both professionals and amateurs, once they have applied a little patience and perseverance, should be able to cut and polish Titanias with most brilliant and satisfactory results. The new cutting and polishing instructions are as follows:

TITANIA CUTTING INSTRUCTIONS

The creation of pleasing Titania gemstones requires the strictest attention to the recommended cutting and polishing techniques. These recommendations cannot be over-emphasized and their strict adherence means the difference between a brilliant gemstone or a product no better than glass.

GENERAL

Preferably the table of the stone should be at 90° to the principal or c-axis of the crystal. Good stones can be made where the table is 0° Tolerance plus or minus 10°.

Facet angles are very important and should be adhered to as closely as possible. The angles and dimensions with tolerances are furnished for brilliant cut round stones and emerald cut stones:

Standard 57 Facet

Round Brilliant

	No. of Facets	Facet Angles	Emerald Cut
Crown Main	8	28° - 32°	40°, 20°
" Splits	16	35°	
" Star	8	15°	
Pavilion Main	8	40° - 42°	45° 40° 35°
*Pavilion Splits	16	41½°	(Corner facets same angles as main facets)

Table Diameter — Approximately ½ of girdle diameter

*Facet length important. Must not be more than 2/3 of distance from girdle to cutlet.

CUTTING AND POLISHING

Cutting and Polishing Table.

st polish obtained by using hard silk on a ss master lap using a water paste of Linde " polishing powder. An alternative is a ed tin lap using a water paste of Linde "A" shing powder. This technique produces a erior polish with slight rounding of the e but this is partially removed by the crown ets.

MPORTANT - - DO NOT use silk or a ored lap for any facet polishing.

Major Facets.

a) First Lapping
Use 400 mesh diamond on an unscored copper lap with water. Optional loose 220 grit carborundum on an unscored lead lap with water.

b) Preliminary Polish
10 micron diamond on a smooth tin lap with olive oil.

c) Intermediate Polish
0-2 micron diamond on smooth tin lap with ive oil.

d) Final Polish
Water paste of Linde "A" polishing powder on a flat tin lap. An 8-inch lap should run 500-600 RPM

Minor Facets.

Steps b, c, and d, shown for major facets. The process outlined is a four-step process. It is definitely possible - and for many lapidaries may be best - to cut this to three steps by making the initial cut finer or by using only one preliminary polish intermediate between the 10 micron and 0-2 micron steps outlined above, or it is entirely feasible to polish the 10 micron surface directly with Linde "A" polishing powder, eliminating the 0-2 micron polish.

Linde Air Products now manufacture variety of synthetic gem boules, including the following:

Stone — *Colors Available*

SAPPHIRE — White, blue, golden, pink, green, and garnet shade.

RUBY — Red (Ruby is red sapphire)

SPINEL — Aquamarine, blue and white. (aluminum and magnesium oxide)

TITANIA — Golden and light straw (Rutile)

The garnet color sapphires are cut as garnets, but have the advantage of being harder than the natural stone.

A single boule may vary from 50 to 200 carats, according to the gem, and Professional gem cutters can obtain boules from Room 1,205 - 205 East 42nd St., New York 17, N. Y. Linde Air Products do not sell retail to the amateur lapidarist, but there are dealers who do retail, such as Guardian Supply & Mfg. Co., 205 E. 42nd St., New York, N. Y., Schwab Lapidary Co., 100 W. 43rd St., New York, N. Y. and Greigers', 1633 East Walnut Street, Pasadena 4, Calif.

Unlike its natural sister the synthetic gem has no internal flaws, no interruption on their mirror-smooth surfaces, nor are there any potential weak spots as will sometimes develop in multi-crystalline surfaces which offer location for immediate wear. The hardness rating of the synthetic sapphire family is 9 Mohs' scale, compared with 10 for the diamond.

Synthetic gem rods may be cut and polished by the high-temperature flame polishing method which gives a brilliant finish without any detectable scratches visible under a high-power microscope. Linde also makes an excellent polishing powder which should be used for all synthetic gems softer than sapphire.

Emeralds are now being produced synthetically on the Pacific Coast, and are said to be excellent in comparison with nature's own product, the green gem beryl. Too good, in fact, for the many hundreds of poorly-colored, opaque or flawed natural emeralds being sold today at high prices in hundreds of jewelry stores in many cities.

ZONOLITE FORMS THREE NEW DIVISIONS AS BASIS FOR EXPANSION

Exceptional increase in demand for vermiculite building materials has been answered by the Zonolite Company, 135 South LaSalle street, Chicago, with the formation of three new regional divisions and the promotion of four men to key positions, A. T. Kearney, president, announced Jan. 5, 1949.

This will provide the basis for construction of five new plants within these areas, Kearney explained.

The North Central division, including Illinois, Kentucky, Ohio, Michigan, Indiana, West Virginia, and the western parts of Pennsylvania and New York, will have headquarters at Dearborn, Mich. Dayton L. Prouty, who has been Detroit territory manager, will manage this division.

The Eastern division, with headquarters in Albany, N. Y., where Zonolite has a processing plant, will be headed by S. L. Dueger, who has been promoted from the post of Chicago territory manager. The division covers Eastern New York and Pennsylvania, New Jersey, and all of New England.

The third new division, the South Central, will be under the managership of J. A. Kelley, who has been in charge of the company's mine and plant at Travelers Rest, S. C., where division offices will be. The area he heads includes parts of Tennessee, Mississippi, Oklahoma, Arkansas, and Louisiana.

Expansion of plant facilities in these sections is included in Zonolite's immediate plans. In the east, sites for tw factories are being considered in Ne Jersey and the Philadelphia area. Anoth new plant probably will be located in th vicinity of Cincinnati. Sites for plants i the South Central division are bein studied in Arkansas, Okahoma, and Mi sissippi.

Another promotion announced is th of W. G. Rogers, formerly in charge o architectural sales for the Chicago terri tory, who has been made manager of th Chicago territory, which includes a plan at Blue Island, Ill.

The need for increased vermiculit production facilities, he said, is reflecte in current sales figures and those for th past decade, which show an increase o about 1100 per cent.

Major uses of Zonolite products ar lightweight, fireproof concrete and plaste aggregates. Recently the company entere the horticultural field with a new vermi culite growing medium.

Vermiculite, of which Zonolite is the world's leading miner and manufacturer, is a mica-like mineral which expands to many times its original size when subjected to intense heat. After this processing the mineral contains thousands of tiny air cells in each granule, making it an excellent insulator. Vermiculite is fireproof, and because of its lightness is able to reduce the weight of large buildings by millions of pounds, permitting a saving in structural steel supports.

Rocks and Minerals Is Tops!

Editor R & M:

I want to take this opportunity to thank you for so generously giving the Pomona Valley Mineral Club such nice notices in the past. I want you to know that I speak on behalf of most of the collectors "here abouts" when I say *Rocks and Minerals* is "tops" on articles and news of the societies.

G. W. Weist,
Ontario, Calif.

April 7, 1949

You Will!

Editor R & M:-

Enclosed is $3.00 check for a one year subscription.

I am hoping that thru *Rocks and Minerals* I may become acquainted with the good mineral hunting grounds of the East and with some fellow collectors.

Ralph A. Bishop,
Manhasset, N. Y.

Dec. 22, 1948.

COLLOQUIALISMS AID COLLECTING

By C. HENRY KING
Box 109 Franklinville, N. C.

A man went into the countryside and inquired of a farmer if there were any 'colinus virginianus' in the vicinity. "Any what?" exclaimed the farmer. "Colinus virginianus," repeated the man, "it's a kind of bird." "Oh," replied the farmer, "What kind of bird?" After hearing a somewhat elaborate description, comprised of technical terms, the farmer shrugged his shoulders and said: "Sorry sir, I don't know of any such critter." The city man returned to his car and drove away little realizing that the farmer knew all about *Quail* and knew where they were likely to be — in season. Why in the world didn't this man say he was looking for quail —or at least 'Bob-white'?

The above fabricated story may be far fetched, but not too far to find a parallel in the life of many a rockhound. This first occurred to the writer when preparing the article "The Gerhardt Pyrophyllite Deposit" (*Rocks & Minerals*, Sept. — Oct. 1948). Misdirection with loss of time, or even failure to find the deposit, might result if one should ask for it by name. Correct though it be, we must discard the proper name and use the local colloquialisms. In this case it is "the soapstone mine".

What wonderful specimens or excellent collecting areas are we passing up by not knowing the name used by resident people? It is true that many minerals have well known nicknames and to list a few there are "peacock ore" (Bornite), "horn silver" (Cerargyrite), "blackjack" (Spalerite), "drybone" (Smithsonite), etc. It will take but a minute though to realize that these are names used within the sphere of mineral-conscious people— collectors, miners, and prospectors. They are of little use whatever in dealing with the gas station attendant, the farmer, or the man at the general store. To command their interest and receive their information we must speak their language —literally.

To demonstrate and parallel the episode of the man looking for quail, let's cite the following: The writer is presently living in Randolph County, North Carolina, and scattered over this county are numerous fields and hillsides where one may find nice limonite pseudomorphs after pyrite. An itinerant collector asking where he could find limonite pseudomorphs would no doubt get a quizzical stare and in all probability an emulation of the farmers' "Sorry sir, I don't know of any such critter." What a difference there be if a person ask these same people where they might find some 'jackrocks'. With interest and kind manner they will describe a field where they occur and the manner of reaching it. The right key is used — is it unusual that the door should open?.

The word "Jackrocks" is an interesting application. In the bygone days of makeshift and homemade toys the children devised their own playthings and among them were jacks. If the girls wanted to play jacks they got their ball, or borrowed one, and went to the field for a handful of cubes. The cubes were symmetrical, easy to find, and easy to handle. What better for the purpose? The name "jackrocks" was known to young and old alike — and is still.

Other local names commonly used are: glass rocks for Rock Crystal, white flint for Milky Quartz, and as mentioned previously, soapstone for Pyrophyllite. In the adjacent county of Montgomery, a farm family calls Amethyst "Indian Beads". The crystals occur loose in the soil on their farm.

We have now reached the apex of this discourse to wit: each rockhound should compile a list of local names used for minerals and mineral localities. Persons planning trips outside their own home grounds could write to collectors living in the area they expect to visit and obtain these lists for inclusion in their notebook. There is no doubt but what the lists will facilitate location of sites and be instrumental in recovery of specimens.

To further disseminate this information,

all those writing mineral articles could occasionally include the local name for a mineral along with the correct one. Any information as to the origin of the name would also be interesting. There is a CURIOUS LORE OF PRECIOUS STONES; who knows but what someday a literary rockhound will write a "Curious Lore of Common Stones" based on our aggregate contributions?

COLLECTING IN ANTIQUE SHOPS

By REV. CARL J. ERICKSON

410 - 8th St., Rockford, Ill.

I have been collecting minerals for some 20 years and have now a very extensive collection of some of the choicest specimens, I have always tried to get the best there was to get, both in color and quality as well as size. The other day, up in St. Paul, Minn., I came across a huge apatite crystal weighing 37 lbs. It had beautiful crystal faces and was blue-green in color. It won my heart right away and as it was for sale it landed in my collection. The only fault with it is —no locality. It was picked up in a home and goodness knows where this fine crystal may have traveled from. Could any reader suggest where it might come from? (Perhaps Buckingham, Ont., Canada, where crystals up to 500 lbs. have been found.—Editor)

I do not belong to any mineral club except the R.&M.A.; nor have I been able to get out and collect minerals in the field. But I have found a very profitable collecting field in old antique shops. Very seldom do I go into such a place without finding something. One day I saw a big, as I thought at first, bowling ball resting on the floor. I picked it up and nearly dropped it for it was heavy — it was a beautiful agate sphere (polished) measuring some 7 or 8 inches in diameter. With shaky voice I asked, "How much?". The lady answered, "Five dollars". Well, in two hours it was in my collection.

Another time I found in a place a very dusty and forlorn looking crystal. I noticed that it was clear and square-shaped and had possibilities of being polished into a nice specimen. I bought it for $3.00. On reaching home where it was washed and cleaned, it turned out to be a beautiful Iceland spar 6 x 4 inches in size and some 2 inches thick. A scientist in Chicago saw it and immediately bought it from me for $150.00. That was the best deal I ever made.

Gold nuggets (some beautiful ones), black opals, and other fine minerals have been found in this way. One day I saw in a basket of stones a beautiful Australian opal (in the rough). It was gorgeous in its colors. I wanted to buy it in the worst way but an auction had been announced and it was going to be auctioned off in the lot. The day before the auction I stopped in again to feast my eyes on the beauty but on looking into the basket it was gone. I asked the man in charge about the opal and he informed me that someone had picked it up and walked off with it. Well, so it goes. Some things you get and some things you don't get. But nevertheless it's lots of fun and it keeps you young and full of zest and vigor expecting to find some choice mineral specimen in the antique shop around the corner.

Therefore I say, God bless all rock collectors whether young or old until some blessed day when we shall chip some stones out of the foundation of Jesus' Jerusalem!

Copies Lost in the Mails.

Editor R & M:

I can't stand It! The Suspense is Killing me! I have NOT received any copy since the Sept.-Oct. issue. If my subscription is up please advise me and I'll RUSH my check!

W. H. Stearns,
Savannah, Mo.

Feb. 4, 1949

COLLECTORS' COLUMN

Conducted by A. CAL LECTOR

AZURITE

This column, which began with the Sept.-Oct., 1948, issue, is of special interest to beginners in mineralogy, as we comment briefly on one or more of the common minerals. In the last issue we talked on arsenopyrite, the chief ore of arsenic. This time we will take up azurite, an ore of copper.

Azurite is a copper mineral (hydrous carbonate of copper). Its color is always some shade of azure-blue, hence its name, azurite. It is a very common mineral and is often found as deep blue stains or incrustations on other minerals and even rocks. Beautiful crystallized specimens are found in the copper mines of the west and especially in Bisbee, Ariz.

One of the oldest localities for very fine crystallized specimens of azurite are the long abandoned copper mines at Chessy, near Lyons, France, which gave the mineral its former name, chessylite. Fine crystallized azurites are today being found all over the world — a noted locality are the copper mines at Tsumeb, S. W. Africa.

Sometimes azurite occurs in a massive form, often with malachite which can be cut and polished to make attractive ornaments or gems. Bisbee, Ariz., is a locality for gem azurite.

If your collection does not contain an azurite, by all means order one or more specimens from your dealer. A good crystallized azurite is one of the world's most beautiful mineral specimens.

U. S. CIVIL SERVICE OPPORTUNITIES

GEOLOGISTS NEEDED IN FEDERAL SERVICE

The U. S. Civil Service Commission has been accepting applications for some time for its Geologist examination. However, sufficient eligibles have not yet been obtained, and the Commission again wishes to bring the examination to the attention of qualified persons who have not applied.

The geologist positions to be filled are located in various Federal agencies in Washington, D. C., and vicinity and in the Departments of Agriculture and the Interior, throughout the United States. Salaries range from $4,479 to $7,432 a year. Competitors will not be required to take a written test. To qualify, they must have completed college study in geology or must have a combination of such study and technical experience. In addition, they must have had professional experience in geology.

Further information and application forms may be obtained from the U. S. Civil Service Commission, Washington 25, D. C., from first-and second-class post offices, and from Civil Service regional offices. Applications will be accepted in the commission's Washington office until further notice.

THE MICRO-MOUNTER

Conducted by Leo N. Yedlin, 557 W. Penn. St., Long Beach, N. Y.

The New York Microscopic Society held its annual exhibition at the American Museum of Natural History in New York on February 26, 1949. Altho the maximum interest was not in mineralogy several members exhibited in this field and many things of interest to the m/m collector were displayed.

Of primary importance, we believe were the various kinds of equipment. About 100 microscopes were in use, of every type, and the lighting facilities ranged from a simple electric bulb coupled with a "bullseye" magnifier to the latest in fluorescent fixtures. On display, too, were exhibits of micro and microphotography, both still and in motion. Some of the exhibitors: Jay T. Fox — Visual Aids in Modern Education, including photomicrography, micro-mineralogy and micro-projection; Peter Thein, G. H. Hauze, Leonard Morgan, George Ashby, and Ilsley Boone — micro-mounts and thin sections of minerals and rocks.

In addition, Ben Rosenberg showed 6 antique microscopes, all in excellent operating condition. These dated from 1704 to 1828, and exhibited a clarity and perfection comparable to those made to-day.

This was a worthwhile exhibition. We visit regularly, and each year come away with new ideas and information.

The New York Microscopic Society meets at the American Museum of Natural History twice monthly from October to May. One meeting consists of a lecture and discussion. The other is broken into separate panels to satisfy the varied interests of the members. One group at the panel meeting concentrates on micromineralogy, and this phase of the microscopic art alone would justify membership in the organization.

Some months ago (*Rocks and Minerals*, Sept.-Oct., 1948, p. 821) we discussed m/m box holders, and published a sketch of a piece of apparatus that we thought was excellent. The item had been seen as part of the collection of the late John A. Grenzig. Just recently we discovered the designer. He is Peter Thein, of Brooklyn, N. Y., an ardent microscopist. He is not at the present time in active production, but has made many "jigs" and fittings for the 'scope. Purely as a labor of love.

The mail brings price lists from 2 dealers in m/m minerals and supplies. Hatfield Goudey of Yerington, Nevada, and J. E. Byron of Boulder, Colorado, offer m/m specimens both boxed and unmounted. For those who prefer to mount and box their own, a saving of 50 cents per specimen is effected. Both dealers can furnish boxes, cement and supplies. Their lists are imposing. We know from experience that the mineral material is of the finest. In addition, Goudey supplies hand specimens and minerals in bulk. Byron sells "thumbnail" specimens, for collectors with limited cabinet space. Don't be misled by the characterization "thumbnail" specimens. One of the finest private collections we have ever seen was assembled by Martin Ehrmann of New York (now of California) in which no specimen measured more than ¾ inch in size. We cannot forget the superb things he had discriminately gathered.

Harry Ross of New York City is marketing an inexpensive microscope. It is of aluminum, shaped like a fountain pen, with pocket clip, and is roughly 4¾ inches long, 7/16 inch in diameter and magnifies about 20 X. Fixed focus, which is critical when the flange at the bottom of the 'scope is rested on a surface alongside and in the same plane as the object to be viewed. Image is clear and free from distortion. Focal length about 13/16 inch. Width of field about 3/16 inch. Image is reversed as with single barrelled microscopes. Depth of focus is quite shallow but is sufficient to examine small crystals. Good as a field lens and for poking into crevices where ordinary hand lens cannot reach. Attached to a laboratory stand it will do as an inexpensive

microscope. Price, about $2.50. We think the instrument can serve a useful purpose in the field of micro-mineralogy.

Have you ever examined opal under the microscope? The Ace Lapidary Co. of Jamaica, N. Y., was good enough to forward some chips of brilliant black opal from Queensland, Australia. We viewed them at about 36 magnifications, and were startled at their brilliance and beauty. The specimens were improved by the enlargement. Definite zones of color were observed. The various hues followed unseen cracks or bands, beginning with pale tints and grading into deep tones. Here is one mineral that will give maximum enjoyment even tho it is not crystallized.

From time to time we have found a transparent specimen that was so pitted and rough on the surface that we have polished one face to act as a "window" to ascertain what was inside. But Robert Roots of Denver, Colorado, has gone a step further. He writes, in part: "I have crystals of chalcopyrite, stibnite, cervantite, and malachite, all in quartz, as well as many others. I do not have a 'scope at present, but have been cutting cabochons with high crowns to magnify the tiny crystal inclusions. With this method I can get up to 4 X magnification."

This is wonderful. A good deal of skill is required to eliminate aberration, and it is our opinion that this effort required to produce a m/m merits considerable praise. There is no end to the ingenuity of the mineral collector.

Tschume new president of the American Society of Photogrammetry

WASHINGTON, D. C.—George G. Tschume, manager of photographic lens sales at Bausch & Lomb Optical Company, was today (Jan. 13, 1949) elected president of the American Society of Photogrammetry.

Tschume, who lives at 450 Oxford St., is the first Rochesterian to be elected pesident of the national society which is primarily concerned with the scientific advancement of photogrammetry. The organization numbers over 1,400 members, most of whom represent the armed services, government agencies, and industrial concerns.

A member of Bausch & Lomb since 1909, Tschume studied optics at the University of Rochester and took special courses at Rochester Institute of Technology. After working in the optical firm's New York Office, he was recalled to Rochester in 1916 and placed in charge of production and expediting manufacture of gunfire control equipment during World War I. He was appointed head of Photographic lens sales in 1920.

The photogrammetry society also announced that Kenneth E. Reynolds, an assistant to Tschume, was re-elected to the A. S. P.'s board of directors. Reynolds lives at 21 Sonora Pkwy.

In addition to being president of the A. S. P., Tschume is a member of the Photographer's Association of America, the Photographic Society of America, the American Congress of Surveying and Mapping, the Society of American Military Engineers, the Army Ordnance Association and the National Association of Photographic Manufacturers.

Appreciates Booklet

Editor R & M:

I want to take this opportunity of expressing my appreciation to you for your very fine booklet entitled "How to collect minerals". It is so very useful to anyone interested in rocks and minerals as we all are.

W. Hanson,
Edmonton, Alberta, Canada.
March 7, 1949

WORLD'S DEEPEST BOREHOLE IN WYOMING

Farson, Wyo., April 7 (AP) — The Superior Oil Co. today drilled its Pacific Creek well to 18,772 feet, making it the deepest oil well in the world.

The company held the previous record with an 18,734-foot well at Ventura, Cal.

A company official said the well, 23 miles east of here in Sublette County, probably will be drilled to below 19,000 feet. Its $1,000,000 rig, said to be the world's largest, is capable of drilling 20,000 feet.

The company has encountered two formations in the well but has made no announcement of its findings.

—*Buffalo Courier-Express*, Buffalo, N. Y., April 8, 1949.

Rocks and Minerals is indebted to Ray Letson, of Corfu, N. Y. for the above information. We appreciate these items and hope readers will continue to send them in, as new records are made in drilling oil wells.

URANIUM SUPPLIES

(Statement of DAVID E. LILIENTHAL Chairman, U. S. Atomic Energy Commission, to Press Conference in Denver, Colorado, December 17, 1948)

The potentialities of the atomic age have been sold short several times in recent weeks. Statements have been made and widely publicized, that there is only enough uranium ore to last a relatively brief period, and so the prospects of benefit from atomic power must go glimmering. This is simply not so. It appears clear that atomic energy is on a sound basis for an indefinite period in the future.

An unwarranted impression that a shortage of uranium will drastically limit the possibilities of atomic energy has been caused by estimates that known reserves of uranium would last perhaps only 30 years or not more than 40. Estimates of the total world supply of uranium have run from 30,000 tons to 500,000 tons, seventeen times as much. Estimates of rates of potential consumption of the fissionable material derived from uranium have also varied considerably.

The people of the United States are entitled to know that these estimates of a short-lived atomic enterprise are not correct. If they were true, this would be very serious news. As explicitly as national security permits, the Atomic Energy Commission wishes to state that it finds no basis in fact for these statements about extremely limited uranium ore supplies. If this foreshortening of the atomic age were accurate, the plants and operations of the atomic energy program of the United States would have to close up in a few years.

Instead, the contrary is true about uranium supplies. Estimated known reserves have already increased substantially since usefulness of uranium as a source of fissionable material became firmly established.

Let us look at the facts as they are available generally for making such estimates. Necessarily most of the published data concerning ore deposits and ore reserves is pre-war information. Before the war, uranium was used principally as a pigment in the ceramics industry and was essentially a by-product of radium or vanadium ore. Man has just begun to look for uranium; in every quarter of the earth's surface prospectors' picks are breaking the rocks in this search. The current great prospecting surge may result in the discovery of new uranium deposits that will significantly alter our concept of world supply. Some good prospects are turning up in Canada, to cite only one country. It would be surprising if new discoveries there would not, over the years, equal or better the great Eldorado mine. Only a few new important discoveries would change the world supply picture profoundly. Nor is it necessary that such new discoveries be made in hitherto unsuspected places. One of the rules of mining is to look for new ore deposits close to known big ones. New discoveries in the Eldorado mine or Shinkolobwe mine in the African Congo would affect the uranium supply position of the world as profoundly as, say, one in South America — and would be reflected in production sooner.

Another rule is that good mines die hard. The comparison of measurable ore reserves with rates of consumption at any time means very little in terms of future supply. The prophets of early exhaustion of our petroleum, lead, copper, and other non-replaceable raw materials have found this out to their chargrin generation after generation.

Recently some figures on petroleum, non-ferrous base metals, and iron for the United States have been called to my attention. American Petroleum Institute data have shown an annual increase in the known reserves of petroleum almost every year for a decade or more despite increasing rates of production. Yet 25 years ago dire predictions were made that the rate of discovery of new pools was not keeping pace with consumption. Iron may be one of the metals that we have depleted most in this country. Government estimates of iron ore reserves for 1946, although showing serious decline in

the past 20 years because of enormous production, were nevertheless greater than in 1918 and almost as great as in 1908. The iron industry is, however, on the verge of solving the technology of treating vast reserves of low-grade taconite not included in the ore reserve estimates. In addition it will be able to draw on the big, high-grade discoveries in Labrador, Canada and Venezuela. The trend of copper reserve estimates has been steadily upward for many years, although the trend of production has also been upward.

Mr. Howard I. Young at the recent annual banquet in St. Louis of the Industrial Minerals Division of the American Institute of Mining and Metallurgical Engineers was talking about other metals than uranium, but much of what he had to say is applicable to uranium also. He pointed out that for very good reasons many mining companies spend only enough money in development work to maintain ore reserves of one to five years. Development work is costly, and frequently it is bad business to make a capital investment in development work that will not yield returns for a long time to come.

One factor that obviously has not been taken into account in these pessimistic predictions about the uranium ore supply is our growing technology and its future application to low-grade sources of uranium. Most metals have gone, or are going through, a cycle where high-grade deposits are at first the only commercial deposits. Then gradually large low-grade deposits yield to man's technical ingenuity and become important producers. This cycle is strikingly demonstrated in the case of copper and lead in this country. At one time five-percent copper ore was a must. Now important production comes from underground as well as open cut mining of copper ores of less than one percent copper. It used to require 5 to 7 percent lead to make ore, but for years now lead mines of Southeast Missouri have profitably mined ore containing as little as 2 percent lead. In the case of iron, enormous effort is now being put into the problem of utilizing the low-grade taconite of the Mesabi Range which formerly was not considered ore, and there is little doubt but that this effort will be successful. Probably the record for handling low-grade ores to date was the recovery of magnesium from sea water during World War II.

As for uranium, Sweden has already announced that she plans to recover uranium from oil shales, and oil shales and other types of marine sediments which contain small amounts of uranium are under study in this country as in other parts of the world. One important potential low-grade source is that announced recently by the Union of South Africa. The gold ores of the Witwatersrand contain low concentrations of uranium, and by-product uranium undoubtedly will come from the huge gold mining industry of that country.

Uranium has been estimated to occur in the crust of the earth probably a thousand times as plentifully as gold or a hundred times as plentifully as silver, and possibly more plentifully than lead or zinc. Figures of this kind, however, have even less meaning than figures for proven ore reserves. It takes considerable concentration of uranium, just as it does of lead or zinc, to make a mineable deposit under anything like present economic conditions. The fact, however, that uranium is not a great rarity lends credence to a geological opinion that it is apt to be present in the right place reasonably often when geological concentrating processes are at work.

The Atomic Energy Commission of the United States is responsible for one of the most extensive and intensive searches for a mineral that has ever been conducted, and on a world-wide basis. We do not expect that there will be an unlimited supply but there is no sound basis for a conclusion that usable uranium ore supplies will not be available for the indefinite future.

Buy More Savings Bonds & Stamps

CLUB AND SOCIETY NOTES

ATTENTION SECRETARIES—If you want your reports to appear in the Sept.-Oct. issue, they must reach us by Aug. 20th — The Editor.

The Midwest Federation Convention August 26-27-28

All who are interested in minerals whether it be from the angle of the specimen, its manner of occurrence, or from its ability to take a polish, will find the Midwest Federation of Geological Societies Convention at Devenport, Iowa, an opportunty to enjoy any or all of the angles.

In addition to the usual attractions of such a convention in such a beautiful city as Davenport, there will be several new features. One such unique innovation will be the display of fresh-water pearls and clamshell products. The pearls from the Davenport-Muscatine area have a world-wide demand. Youth will be served. The Junior mineral collectors will be afforded a chance to appear upon the program. A special exhibit of Society publications will be invaluable to those who are seeking a way to improve their own publications. These and many more displays will be placed in the well lighted rotunda of the Davenport Public Museum.

The field trips to noted localities will be an incentive for folks from all over the country—for all roads lead to Davenport. So, get on the band wagon. You are welcome whether your society is a member of the Midwest Federation or not. Incidentally, why not?

E. Lillian Mihelcic, Secretary
Midwest Federation of
Geological Societies.

Napa Valley Rock & Gem Club
Napa, Calif.

The Napa Valley Rock and Gem Club has just celebrated its second anniversary.

The club has grown in two years from its original group of ten to forty enthusiastic members. Ten of these have their own cutting and polishing outfits and one has a facetting outfit. They enjoy making their own exhibition pieces and costume jewelry.

We take this opportunity to pay tribute to two of our founders and past officers — Mr. William Dorward, who was stricken while on a rock-hunting trip to the desert; and Mrs. Frank Level who was laid to rest after an illness of several months. We shall miss them both greatly.

An exchange club night was held on March 8 when Napa entertained the rock club from Santa Rosa. At this time movies and kodachrome slides were shown, may beautiful stones were exhibited and delicious refreshments were served.

Edith Gardner, Secretary,
1930 Stockton Street,
Napa, California.

San Diego Lapidary Society

Members of the Society have been busy installing lapidary equipment in the Horace Mann Junior High School. This equipment has been donated by members of the San Diego Lapidary Society, with the School's business department and the Society buying odds and ends to complete a Lapidary Unit.

The interest in cutting is so great that lapidary classes are held four nights a week with jewelry one night. Many beautiful pieces of work have been done in these classes.

Margaret M. Miller
Rt. 2, Box 273,
Lakeside, Calif.

Pacific Mineral Society

Members of Pacific Mineral Society held their April meeting at the Chancellor Hotel April 8th. "49er NIGHT" was the theme of the meeting, the tables being decorated in gold and blue, the society colors, with "pot 'o gold" vases holding golden roses.

Members were attired in "49er" clothes, the men in checkered shirts and boots, mustaches, beards and sideburns. Some with fancy vests and long watch chains with "gold nuggets" attached. The fairer sex wore early day print dresses with long full skirts gathered at the waist. Several ladies had colorful fringed shawls around their shoulders.

The speaker of the evening was William R. Harriman, mining engineer and past president of the Los Angeles Mineralogical Society. His subject was "Geology of Mother Lode" and told of the growth of California from the time there were only 24,000 white people in the whole state and the non-Indian population of the pueblo of Los Angeles was only 600 until the more modern times, giving details of the geological formation of the area of the Gold Rush Days.

Several members brought early day relics to be displayed for the enjoyment of all, they included scales with weights of gold pieces which made the trip around the "Horn". Several miners pans from the large size to the small six-inch pan. A great horn spoon made of horn. Gold nuggets valued from $25 down to 50 cents and a display of very fine gold. One set of scales was found in an old adobe house among early day relics. Old books and maps giving names of early day places that no longer exist.

The April field trip was announced for April 23rd in the Rincon area."

Myrtle Musselman
Box 463
Lomita, Calif.

Puyallup Valley Gem & Mineral Club

For quite sometime a number of rockhounds and would-be rockhounds of this valley have had a feeling that we would like to get together and organize a rock club which would accommodate the people of Puyallup and also Enumclaw, Sumner, Orting, and other close towns.

It was in October that we first met at the home of Mr. and Mrs. Joe Boone, 202-7th St., S. W., and talked over possibilities. We spent a very pleasant evening together and all enenjoyed their nice collection of Indian artifacts and their many cut and polished rock specimens as well as many natural ores.

A decision was reached to meet every second Friday of the month so as not to interfere with our sister clubs especially in Tacoma and Tenino, as a number of Puyallup people belong to one or the other of these clubs and some to both. This date will leave anyone free to attend their meetings; also we are most happy when anyone from other clubs can attend one of our meetings.

Another meeting was planned for Oct. 9th. This time we met at Boone's Grocery Store. They have a nice place and graciously offered it as a meeting place for the Club. Anyone who has tried to find suitable quarters for a meeting knows how much their kind offer meant. It is well lighted, warm and has comfortable seats. At this meeting we adopted a constitution and by-laws, elected temporary officers, and also chose our name, The Puyallup Valley Gem and Mineral Club. It was a lot of business for one evening, besides we signed up 16 members, and we all felt we had spent another profitable evening.

We did not want to elect permanent officers until we had given all who were interested a chance to join our group.

We met next time on Nov. 12th, again in December, then on Jan 14th we held our annual election, the following are our officers for 1949:

President—Joe Boone
Vice-Pres.—Bill McCallister
Sec-Treas.—Viola Smith
Federation Director—C. H. Robinson, Sr.
Directors—Leonard Runyon, Al Dahlquist, Leroy Connelly

There were 19 present at this meeting.

February meeting came and we welcomed a group of 26, among them several new faces. Our membership has grown to 30 and several more plan to join up at our next meeting.

A good spirit prevails in the meetings, a helpful kindly spirit.

Many beautiful specimens of God's handiwork have been displayed at each meeting. Many beautiful cut and polished pieces, yes, and some very modest displays by new beginners. All have been enjoyed and the interest is keen.

Now that spring will be crowding "Old Man Winter" into the background, we are beginning to be troubled with itching feet. We want to get started on our first field trip. Plans are being made. We're hunting up our supply of shovels, picks, and sacks and soon, very soon, we hope we will venture into God's great outdoors for a day of communion with Mother Nature and if luck is with us we hope to add materially to our collections.

Mrs. Viola Smith, Sec.
507-16th St., S. W.
Puyallup, Wash.

New York Mineralogical Club

Columbia University (Schermerhorn Building), New York City, Wednesday, January 19, 1949

The speaker of the evening was Arnold Hoffman who spoke on "Mining in the Northwest Territory". The principal localities described were Great Bear Lake and Yellowknife. Both of these localities have timber which makes it possible to develop them. Further east are the barren lands where there is no timber for fuel or structures and where everything has to be flown in making development almost impossible. In a region where transportation costs are extremely high because everything has to be flown in, a deposit has to be very rich to make it worth while to mine. Yellowknife, a gold mining town, promises to develop into an important area.

The talk was illustrated by a Kodachrome motion picture.

Wed. Feb. 16, 1949, Meeting

Mr. Joe Rothstein and Mr. Victor Pribil showed some of the cabochons and faceted stones they have cut in the Lapidary course at City College during the past year.

Mr. Gilman S. Stanton reported that Mr. John Rosch, one of the founders of the New York Mineralogical Club in 1880, died at the age of 92 at White Plains on January 31, 1949.

Dr. Frederick H. Pough showed two synthetic rutiles, one blue and the other a pale golden color.

The speaker was Frederick Stenbuck who spoke of "Ninety-seven Hundred Miles of Mineral Collecting". Dr. Stenbuck traveled from the east coast west through the northern part of the United States, south along the west coast then east across the southern part of the United States. He visited many interesting mineral localities including the Peerless and Etta mines in South Dakota; Butte, Montana, where he went underground to see a demonstration of mining; and the large Morenci open pit copper deposit. In addition to mineral localities he visited many places of scenic and geological interest such as Yellowstone Park, Crater Lake and the Columbia River. About 250 specimens were obtained on this trip. The talk was well illustrated with Kodachrome slides.

Purfield Kent, Secretary.

The Georgia Mineral Society, Inc.

The regular monthly meeting was held in the Blue Flame Room, of the Atlanta Gas Light Company, on Monday Evening March 7, 1949.

Several new members were introduced, and after the regular order of business, Mr. Gleason offered the use of his Geiger counter and Mineral light, which he will have available at his home on Sutton Street. This offer will be much appreciated by members of the Society and others who have ores and specimens with possibilities of Uranium content.

Professor A. C. Munyan of Emory University was introduced and his subject was Fossils. In Prof. Munyan's talk he explained the identification and naming of various types and how they are used by Geologists in the search for oil and other minerals. The talk was illustrated by lantern slides which made various phases very clear to those who are not familiar with them.

After the meeting an old time mineral collector's cabinet with the specimens was exhibited. The specimens were labled and still in very good condition.

April Meeting

On Monday evening April 4, 1949, the regular monthly meeting was held in the Civil Engineering Building of the Georgia Institute of Technology. About fifteen new members were reported to have joined since the last meeting by our Treasurer, Mr. S. P. Cronheim. President Peyton introduced the new members and guests.

Dr. Furcron announced that the Georgia Academy of Science will hold its annual session at Emory University on April 22 and 23, and members of the Georgia Mineral Society are invited to attend. In addition to the various papers to be read, there will be an exhibit of the Georgia Junior Academy of Science.

President Peyton told of the unanimous approval by the Executive committee of the establishment of an Earth Science Museum by the Society, and asked Dr. Furcron to say a few words about what had been done along this line. Dr. Furcron told of receiving a box of about forty Maine minerals from students at the University of Maine, also of other specimens, all of which will serve as a fine beginning for the Museum.

Dr. Mitchell of Georgia Tech offered a large display cabinet in the Geology Department for the temporary housing of some of the specimens. Housing will be the big problem in this connection, but we have high hopes for the future.

After the business session, a short film was shown on "Colour in Clay" which was an excellent color film on the production of chinaware in England. This was an interesting and educational 15 minute reel and was very appropiate as it was pointed out that for a good many years past clay has been Georgia's top mineral

President Peyton then told of his trip to San Francisco with Dr. Jones, State Geologist of Alabama, to attend the meeting of the Association of State Geologists. His experiences and contacts along the way were very interesting and he left some of them with reluctance.

After the meeting Dr. Furcron had some very excellent mineral specimens from Mr. W. Harold Tomlinson to give to those interested, and needless to say there were plenty of rock hounds very interested as he was completely surrounded the moment the meeting adjourned.

S. C. Knox, Corresponding Sec.
2142 Memorial Dr., S. E.
Atlanta, Ga.

Mineralogical Club of Hartford

All of the monthly meetings of the Mineralogical Club of Hartford, Connecticut, were held at Boardman Hall, Trinity College, during 1948-1949.

Attendance has been good at each meeting and very enjoyable and worthwhile programs have been presented. At the September, 1948 meeting colored slides of the Harvard Collection were shown. The following month there was a display and exchange of specimens collected by members during the summer.

Mr. Ralph E. Keirstead, co-author of the Wonderworld of Science series, gave a discourse on "Some Chemical Aspects of "Minerals" at the meeting in November.

Much careful preparation made the Christmas party an outstanding event. Many games were planned that utilized the Club's knowledge of rocks and minerals.

Dr. Edward L. Troxell of Trinity showed pictures of a western geological trip at the January meeting. In addition, S. W. Stone, also of Trinity, presented an excellent talk on the classification of igneous rocks.

Our February meeting was given over to gem identification under the direction of Orlando S. Paddock, Gemologist. Tests and methods of identification were applied to a number of precious stones, each of which, on first glance, might have been taken for topaz.

"Seeing America" was one of the most appropriate films that could have been shown to a group interested in minerals. At the March meeting Ernest Balenger showed his colored movies which featured many of the interesting geological formations of the west.

George L. Smith, President of the Club, explained some modern mining methods at the April meeting. Iron, zinc and feldspar mining and quarrying were considered. Modern methods enable the miners to use much material that had to be discarded some years ago.

In addition to the annual meeting and election of officers in May, time was devoted to a study of the fine mineral collection of Trinity College.

Carrie C. Bangs, Secretary,
11 Alden St.,
Hartford, Conn.

Pomona Valley Mineral Club

The March meeting of the Pomona Valley Mineral Club was held in the Chemistry Building of Pomona College. Don George, curator of the museum of the California Institute of Technology, was guest speaker. He spoke of the Harding Mine in northern New Mexico and discussed the pegmatites and various other minerals of that vicinity. Mr. George gave a brief description of pegmatite, stating it was similar to granite, except that the minerals composing it were much more varied in size.

Giving a short history of the Harding Mine, Mr. George said the mine was first worked for lepidolite, which is used in the manufacture of Pyrexglass. The mineral adds toughening qualities, and makes it possible to cook and bake with glass.

The area of the Harding Mine was first discovered around 1900, but was not recognized for what it was until 1919, when a prospector located the property. Little sucess was had the first two years. In 1922, a mining engineer saw what the property consisted of and started shipping the mineral to Wheeling, West Virginia. Some of the other minerals taken from the mine were beryl, spodumene, and quartz. Twelve thousand tons of lepidolite were taken from the Harding between 1920 and 1930.

Mr. George gave some interesting facts about mica, saying it was mined during the 17 century for window glass, and was used for insulation during the recent war years. The best sheet comes from India, with Brazil also exporting the mineral.

The lecture was illustrated with slides, showing the location of the mine and colored shots of the mineral taken from it.

The club enjoyed Mr. George's talk immensely, and hope he returns at an early date.

April Meeting

The annual election of officers of the Club was held at the April meeting in the Chemistry Building at Pomona College. New officers are F. H. Smith, president; Pauline Saylor, vice-president; Alice Cohoon, secretary; W. B. Cohoon, treasurer; and J. A. Kryder, director.

Nancy Taylor, a member of the Club, showed some very beautiful slides of the western National Parks, which she and her family took on a recent vacation. Yellowstone Canyon and Lake were among the first shown, with some fine shots of the Norris Geyser Basin. After these wonders, Glacier Park, with its breathtaking views, was next, followed by the cliff dwellings of Mesa Verde, which were interesting. The back country of Yosemite, the Topaz Mountain in Utah, Zion, and the Joshua Tree Monument were also on the itinerary and were represented by many excellent slides. As a finale, Miss Taylor showed some shots of the California winter in Claremont--snow on the palm and orange trees, and the famous California smudge! She commented briefly on each slide, and the club enjoyed her part of the program immensely.

Mrs. Emma Kryder, also a club member, then told of a recent trip she and her husband and another couple took to Topaz Mountain. They camped out and had varied and humorous experiences. Many fine topaz specimens were brought back, of both the white and colored varieties. Mrs. Kryder said it was fun to hunt topaz at night by flashlight. To see the light reflected on the crystals in the wash was wonderful, but to try to find them was another thing, because as soon as the beam of light was moved, it was almost impossible to find them. Mrs. Kryder had some lovely specimens, both crystals by themselves, and one exceptionally fine one in matrix. Her lecture added much to the evening's pleasure.

A sound film, "California and its Natural Resources", was then shown. The picture is distributed by Richfield Oil Company, courtesy of the U. S. Bureau of Mines and is recommended as a highly informative feature. Agriculture, lumber, mining, oil, water, natural gas, and hydro-electric power are just a few of the many subjects covered in this film. The color photography and the commentary are excellent, and the movie would be a highlight of the program for any society.

Verna N. Weist
Publicity Chairman
322 A East B St.
Ontario, Calif.

Cleveland Lapidary Society

The February 1st meeting at the Mineralogy and Geology Building, Case Institute of Technology, was eminently successful. The meeting room was filled to capacity and not even standing room was left.

The special feature of the evening was a ten minute talk given by Mrs. Mary Beattie on Amethyst — the Birthstone for February. This talk was very interesting and informative.

The main feature of the evening was a picture trip thru the West by Ed. A. Inkley. To describe all the pictures shown would take too long and to pick out a few and omit the others would be an injustice to those not described. Suffice to say that everyone seemed well pleased and expressed their pleasure by the many fine remarks heard after the meeting. Ed did a masterful job.

Mr. E. O. LaFevre brought his wire recorder to the meeting and both talks were recorded and are being transcribed. Later on we hope to make these recordings available to the members.

We also had sixteen new members join the Society, which brings our membership over one hundred. Our chief concern now is to find a meeting place which will accommodate this rapid expansion.

John M. Heffelfinger, Sec.
7619 Redell Ave.,
Cleveland, Ohio.

Independence Gem & Mineral Society

In February, 1949, a new society of rockhounds was formed and this is a report of a year of progress.

Ralph Butler and Roy Waychoff had been hunting and cutting rocks together for some time and often wondered if there mightn't be others in town interested in their hobby. They issued a general invitation via newspaper and radio, and were overwhelmed when 25 men and women accepted. That very night a club of 18 members was organized, officers were elected, and the Independence Gem and Mineral Society was born. During the year membership has doubled.

The Jackson County Library offered a fine meeting place and greatly extended its collection of books pertaining to rocks and minerals. We meet there regularly the last Tuesday in each month at 8:00 p.m. and invite everyone interested to attend. Our guest speakers have included Dr. Ralph Mueller of Kansas City, Mr. W. Whitney of the Missouri Portland Cement Company, Dr. L. J. Gier, professor of geology at William Jewell College, Dr. John R. Ball, University of Kansas City, Mr. Frank C. Greene of the Missouri State Geological Survey, and Mr. P. F. Balfour of Independence, Mo.

The club is very enthusiastic about field trips, and many of the members are out exploring every weekend. However, we have also taken organized trips to the glacial pits at Zarah, Kansas; to McClouth, Kansas; to Liberty, Mo., where Dr. Gier lectured on the local limestone formations. We obtained specimens from each stratum, beginning with the Hertha and continuing up through the Iola layer. Five members of the club joined with several from the Heart of America Geological Society of Kansas City, and Mr. and Mrs. A. C. Carpenter of Ottowa, Kansas, for a four-day trip to Magnet Cove, Ark., in late October. In November, 21 of us spent a most interesting day visiting the Carpenters in their home. Mr. Carpenter began by inviting each guest to wander about and view his collection, and to take samples of ten minerals "no collection should be without", and then gave a short talk on geology illustrating his remarks with specimens. After a breathtaking fluorescent display, and a most satisfying and sociable lunch, he led us to three locations where everyone found calcite crystals of an unusual type, and fine fossil specimens.

Our program chairman has secured many interesting movies for us, and several swap shops and auction sales have been held at meetings. Last July we compiled a club news sheet which proved very popular and became a monthly paper. A contest was held to find a fitting name, and Mr. E. E. Willard was the winner. "The Gemrock" is flourishing. We try to include at least one educational article in each issue, with interesting items about the members, our club activities, and occasionally puzzles. Janearl Jones and Claudia Waychoff are co-editors.

On two occasions members' collections were canvassed for outstandingly beautiful specimens, and these were arranged in displays at the public libraries. The exhibits received considerable comment and publicity.

A class was organized for would-be cabochon cutters and Ralph Butler is the teacher. A group of eight gather in his workshop every Monday evening and they are turning out some beautiful sets.

At the last meeting officers for the coming year were elected. Roy Waychoff and Jerry Manning were re-elected as President and Vice-President, respectively. Janearl Jones was chosen Secretary, and P. F. Balfour, Treasurer. Although they have not yet been installed they have had a meeting, chosen a fine group of chairmen to head the six committees, and outlined a most challenging plan of action for the coming year. The members are no longer strangers to one another — as was proven at our Christmas party! — and their interests and abilities are well known. 1948 was a year of becoming acquainted and having a foundation. 1949 promises to be a year of bigger and better field trips, greater member participation in programs, and good fellowship for all.

Claudia Waychoff,
Publicity Chairman,
1923 Norwood Rd.,
Independence, Mo.

Miami Mineral and Gem Society Organizes

Fifteen Amateur gem cutters and mineral collectors met Feb. 21, 1949, at the home of Mr. L. H. Collar and perfected organization of the Miami Mineral and Gem Society.

Objectives include the development and coordination of interest in the subjects, the creation of an outstanding museum display of minerals and gem stones, and the establishment of a Scholarship in Mineralogy and Gemology.

Officers for the first year were elected as follows:

Margery A. Serafine—President
Prof. Virgil Sleight, U. of M.—1st V. P.
Thomas R. Peterson—2nd V. P.
Henry B. Graves—Secretary
L. H. Collar—Teasurer

Mr. Collar exhibited an extensive and beautiful group of gems which he had faceted and polished and Mr. Graves showed a sample of plastic gem cases manufactured by his company, same being filled with ring and brooch stones cut and polished in his home lapidary shop.

It is expected that the monthly meetings of the society will prove an attraction to many Miami visitors as interest in the hobby is spreading rapidly throughout the country.

Interested persons may address the Secretary at 3163 N. W. 27th Street, Miami, Fla.

Henry B. Graves, Sec'y.

Feather River Gem & Mineral Society

All rockhounds are cordially invited to attend an informal mineral show and pot luck picnic to be held by the Feather River Gem & Mineral Society of Oroville, California, on June 19, 1949. It is hoped that many who plan to attend the National and State Show the following Friday through Sunday will be able to come early and visit with us. Impromptu field trips can be arranged to suit individual tastes, and varying members will be available through the week to help out in any and every way possible.

Mariposite, pyrite and chalcopyrite cubes, calcite, serpentine, asbestos, and clusters of small quartz crystals were the principal finds on the Feather River Gem & Mineral Society field trips of April. Balmy spring weather prevailed, though the west branch of the Feather River was still very cold, as attested by the member who dunked her feet. More than 40 rockhounds and pebble pups joined in this search for "Butte County minerals," a collection of which is being built up for various displays scheduled for coming months.

The official club display is at the Chamber of Commerce office in the Oroville Inn, and minerals are changed each month. On file with the secretary of the C of C is a list of our "Public Relations Committee," those most likely to be available for on-the-moment field trips, and those most easily located.

Since the first of the year the new president, F. E. (Red) Rankin, has been striving to limit business to the first meeting in each month, so that the second meeting can be devoted to increasing the group's knowledge of mineralogy and lapidary practice.

Immediate past-president, and founder of the organization, Chas A Bush, was presented with an onyx and walnut gavel in token of appreciation for his efforts, and he has been named Director of Mineral Studies. At the last meeting of each month, he has been delivering short talks on various phases of mineralogy. However, Mr. Bush is endeavoring to wind up business dealings here so the he may become a "Roving Rockhound," free to come and go as he likes. Only dates he has made for the entire year is to attend our own and the National Shows.

On February 10 the Club heard Charles Hope talk of his experiences in China during and immediately after World War II, when he was working for the U. S. Government. He also told of his courteously conducted trip through Tiffany's in New York, and concluded with a brief description of unusual mining operations necessitated by extreme coldness in Alaska. He brought two sections of a mastodon tusk unearthed there, and on the following Sunday several of the members gathered at the Oliver Clough home and watched the cutting and polishing of some pieces of the ivory. (The terrible odor was unforgettable!)

Colored movies of forest fires and fire suppression, taken by John G Prescott, California Division of Forestry, were shown at the last meeting in February, and a revised constitution, necessitated by the growth of the club was formally accepted in March, though members had been under its provisions for sometime.

Following Mr. Bush's talk on the relationship of the elements at the March 24 meeting, Mrs. F. E. Rankin, editor of the bulletin FEATHER RIVER REFLECTIONS, spoke on the encouraging number of exchanges being received from near and far, and commented briefly on the books she recommends for beginning rockhounds: THE ROCK BOOK, FIELD BOOK OF COMMON ROCKS & MINERALS, GETTING ACQUAINTED WITH MINERALS and QUARTZ FAMILY MINERALS. Also reported on were Calif. Division of Mines Centennial Edition of Bulletin 141, dealing with Mother Lode Country, and Richard Pearl's two new books, POPULAR GEMOLOGY and MINERAL COLLECTORS HANDBOOK.

Adeline Rankin
Corresponding Secretary
RT 2, Box 2105
Paradise, Calif.

Chicago Rocks & Minerals Society

Mr. Paul F. Elarde, a consulting Physicist, entertained the members of the Chicago Rocks and Minerals Society at their February meeting, with a spectacular exhibition and demonstration of luminescence, phosphorescence and fluorescence. Mr. Elarde, with the aid of various violet ray and fluorescent lamps ably explained the theory that light is energy. His performance of magic with charts, diagrams, paintings, rocks and chemicals was little short of spectacular.

Birthday cakes and coffee were enjoyed at the close of the evening in celebration of the Society's third annual birthday.

March Meeting

Dr. George H. Otto, Ph. D., was the guest speaker at the March meeting of the Society. Dr. Otto, as a professor of geology, instructs classes at both the Illinois Institute of Technology, and Northwestern University. He gave a very enlightening lecture on the "Life History of the Rarer Elements", such as strontium, thallium, zirconium and hafnium, wherein he traced the disintegration and deposition of rocks.

Miss Selma Jenner and Miss Gertrude Hannon exhibited separate displays of minerals, geodes and fossils from their own private collections. Both members have been energetic in the field of collecting for some time and their exhibits showed the results of serious hunting on many field trips.

Helen L. Cooke
2952 N. Lavergne Ave.
Chicago 41, Ill.

East Bay Mineral Society

The array of subjects presented at recent meetings of The East Bay Mineral Society of Oakland, California, under the leadership of its president, Millard Moore, has been of such interesting calibre and colorful variety, that the attendance has shown a marked increase. Very favorable comment has been heard on all sides by members who considered themselves fortunate indeed to have been present to hear the noteworthy speakers and view the outstanding exhibits.

The Society recently heard a most intersting talk by Dr. T. K. Cleveland, Ph.D., Editor of "The Vortex", bulletin of the California section of the American Chemical Society. His subject, "Chemistry and Things to Come" literally conducted his absorbed listeners on an indoor field trip into the Wonderland of Chemistry, by a unique and humorous treatment of this complex subject. He produced for his audience through the magic of Chemistry, examples of an amazing array of products from materials formerly discarded as waste.

Another speaker was Mr. Francis J. Sperisen who talked on "Gems and Lapidary Arts". An outstanding authority on this subject, he stressed the early attempts to imitate and synthesize precious stones with illustrations of the clever means by which this is accomplished.

"Faceting Night" was the significant title of one very spirited evening in which members Carpenter, Cameron, Porter, Hawkinson, Higson and Wilcox set up their grinding and polishing machines and invited those present to try their hands at this very *Facet-ating* art. The speaker of the evening was Mr. George B. MacClanahan, President of the Sacramento Mineral Society, who brought his equipment a hundred miles to demonstrate how an expert Faceter works. Besides gem stones, polished slabs and cabochons were also on exhibit. Fun was had by all present in a contest for a fine prize offered for the most professional looking gem cut from garden turnips with razor blades supplied by the speaker, and competition was keen to say the least.

A talk of special interest was given by Mr. R. M. Addison of the San Jose Lapidary Society; the subject, "Cameo and Rock Carving" also included a digest on Silver Soldering and Jewelry Making. Mr. Addison's description of the technique employed in his creation of the finished Cameo from a special sea shell from Madagascar was of intense interest and was substantiated by a large and beautiful display of his Cameos. The audience enjoyed this artistic presentation by one of the very few specialists in this particular craft.

The recent talk on "Micromounts" by Mr. George A. Needham, Past President of the Northern California Mineral Society, and President of the Microscopic Society of San Francisco was greatly enjoyed. His talk was augmented by the showing of some fifty slides in color It was a gala occasion with a battery of microscopes, lamps, instruments, and specimens enough to allow all present to explore a new world of beauty.

The members of the East Bay Mineral Society feel that their meetings are tops when it comes to getting together for a "Listen and See'n How It's Done Bee".

Gordon White,
Corresponding Secretary,
P. O. Box 1196
Oakland, Calif.

Akron Mineral Society

At the March meeting of the Akron Mineral Society, members and guests were entertained by Dr. and Mrs. Walter Cook. Over 200 kodachrome slides were shown by Dr. Cook of his trip taken last summer south and as far west as Arizona. Arizona Crater, Bisbee copper mines, and Carlsbad Caverns were only a few of the many places visited by them.

Mrs. C. R. Violette
392 Reed Ave.,
Akron 1, Ohio.

Southwest Mineralogists

The Southwest Mineralogists held their Feb. meeting with a packed house. The Monday and Wednesday nite Jewelry classes from the Inglewood High School attended our meeting in a body with their instructor, Mr. Hansen.

Mr. Trombatore made a motion to tender our Club's founder and first President, Mr. John Akers, a life membership in our Society. It carried unanimously, and the presentation was made by President Walt Shirey.

Mr. Akers was also our speaker for the evening giving a fine talk on various aspects of the interior of Peru. He showed many fine colored slides taken on his trips through the country.

It is with a feeling of deep loss that the Southwest Mineralogists must report the passing of one of our most outstanding members. Mr. Charles Standridge passed away February 26, 1949. Mr. Standridge was a former Vice President and was also President for two consecutive terms, at the time of his passing he was our Parliamentarian. Altho we miss Stan greatly, we know the rock hunting is better up there.

March Meeting

Mr. George Burnham of Burminco was speaker for our March 14th meeting. Mr. Burnham spoke on A Field Trip in Old Mexico. Equipped with an Army fourwheel drive vehicle, he toured part of the country, in many places without benefit of roads. He told of the difficulties encountered but said the results were well worth the effort . To bear out his statement he displayed many fine mineral specimens from the localities visited.

Connie Trombatore,
Corresponding Secretary,
338 Pomelo Ave.,
Monterey Park, Calif.

Queens Mineral Society

Mr. E. M. Wise, our guest speaker and a fellow mineralogist, was introduced to our members by Mr. Segeler. Mr. Wise is a development engineer for the International Nickel Co., and the subject chosen for discussion was, Nickel and Platinum occurrence and production. Mr. Wise opened his discussion by reviewing the theory that the earth's core is of a nickel-iron nature, and the presence of nickel-iron in meteorites. The use of nickel in ancient coins over 2000 years old was cited. We were briefed on the early Chinese alloying of nickel-copper and zinc to produce nickel silver, and the difficulty encountered by the Germans, in 1700, in alloying nickel with copper due to impurities. In 1848, the English inaugurated the nickel-silver plating process using 18% nickel-silver. Localities in So. America, Canada, and the alluvial deposits in So. Africa and Finnish localities were discussed from a geological aspect. Canadian activities at Sudbury employing hydro-electric refining etc. and the Huntington, W. Va., activity in producing engineering steels and cast irons, low growth cast irons. heat treatable and corrosion resisting as well as non-magnet irons. Included in this activity is the production of high and low expansion ferro nickel and ferro nickels as well as magnetic and non-magnetic ferro nickels. All of these facts were highlighted by movie film of mining, smelting, refining and alloying as well as mining activities in various localites. Projected graphs were used freely and the history of the development of platinum and its uses in aviation and the fields of communications and its applications in personal adornment. Mr. Wise concluded his talk by answering questions from the floor.

An interesting booklet entitled "The Romance of Nickel" was distributed by Mr. Wise, who was accorded a rising vote of thanks by the society.

William Stadler.
153-08—119th Ave.,
Jamaica, L. I., N. Y.

Chattanooga Rocks and Minerals Club

The Chattanooga Rock and Minerals Club met Feb. 2nd in the Geology Dept. of the Univ. of Chattanooga when Mr. T. Walter Brown gave an instructive talk on Oil Geology. He discussed methods of surveying with the plane table in the location of "closures," drilling difficulties, and the logging of drill holes to determine the formations passed through.

On Feb. 13th a few members drove to Wallen's Coal mine in the Thomsonville settlement about 15 miles over the Georgia line on Lookout Mountain. This mine has a hard shale which does not crumble easily. Fossil specimens of Lepidodrendron, Sigillaria and Stigmaria were obtained. No tree-fern leaves were seen.

March Meeting

The March meeting was held on the 9th, in the Geology Department of the Univ. of Chattanooga. Prof. B. K. MacGaw, president of the Club, briefly outlined some of the outstanding addresses delivered at the Symposium of the Mineral Resources of Southeastern United States held at the University of Tennessee at Knoxville March 3, 4 and 5. At the Symposium were about 200 geologists from 15 states, as well as several from the Bureau of Mines and U. S. G. S.

On Sunday, March 20, the club enjoyed a field trip to the vicinities of Blue Ridge and Mineral Bluff, Ga., in the quest of staurolites. Simple crystals in quantity were found, as well as fewer 60 and 90 degree twins. The locality is described by Dr. A. S. Fucron in the Notes of our good neighbors, the Georgia Mineral Society. The day was perfect for a picnic lunch at the T. V. A. Blue Ridge Dam.

Geo. C. Olmsted, Pub. Com.
100 Market St.,
Chattanooga, Tenn.

Mother Lode Mineral Society

At the January meeting of the Society, an election of officers was held with the following being elected.

Royal Brown, President
Julian Smith, Vice-Pres.
Lois Wemyss, Sec.-Treas.
A. J, McMeekin, Director
Jo McKibben, Director

Also held our annual auction sale which netted the Society a nice little sum. George Peterson did a wonderful job auctioneering. There were so many specimens donated by the members and not enough time to sell, we had to hold over some until the February meeting.

Frank Schwing won the door prize which was a beautiful barite specimen. Refreshments were served after the meeting.

Lois Wemyss, Sec.
1310 Tuolumne Blvd.,
Modesto, Calif.

Central Iowa Mineral Society

The Central Iowa Mineral and Fossil Club has renamed itself and will be known hereafter as the Central Iowa Mineral Society. Its members are still interested in all phases of earth sciences, however.

The Society is glad to welcome a new member, Dr. Chalmer J. Roy, of the Iowa State College, Dept. of Geology. Dr. Roy spoke at the March 4th meeting on "Some aspects of modern mineralogy". He closed his talk with some colored slides of the Harvard mineral collection which were excellent.

A "News Nuggets" bulletin is being issued by the Society but it is so new and still in the planning stage, that it has not yet been sent out to other clubs.

Mrs. R. G. Hays, Secretary,
Rt. 1, Buffalo Road,
Des Moines, Iowa.

Newark Mineralogical Society

The 262nd regular meeting of the Newark Mineralogical Society was held Sunday Feb. 6th, 1949 at 3 P. M., in the Newark Museum (Addition Lecture Room, 1st floor), Newark, N. J.

Mr. Edwin Skidmore, a member of our Society, gave a talk illustrated with Kodachrome slides of his trip to the Western Conventions (1948).

Mr. Skidmore began with pictures taken at his home in Mountainside, N. J., before leaving, and showed snaps across the states to Denver. The convention was made real to us with all its glory and magnitude. The minerals, polished specimens, mineral hunt outings, banquets and visits to homes of Colorado friends were described in color and word.

With the Denver convention behind him, our speaker rambled on to the California Convention at Long Beach and all the good things were given over to us in pictures and kodachrome slides.

Our speaker home-ward bound, traveled around the southwest, visiting many mineral locations, mineralogists, and lapidarists while passing through Arizona, New Mexico, Texas, etc. The popular interest in fine lapidary work in the western states was emphasized by our speaker and left an Easterner awed .

When Mr. Skidmore finished his talk, everyone could feel his love for the southwest and the strong enchantment it held for him. We all caught a little of it and felt the desire to cover his footsteps.

Herman E. Grote,
Publicity Chairman,
95 Lenox St.,
Newark 6, N. J.

Colorado Springs Mineralogical Society

The 100th regular meeting of the Society was held Jan. 14th, 1949, at the Atomic Research Laboratory, Peterson Field, Colorado Springs, Colo.

The program was arranged for the Club by Mr. Frank E. Brown, who presented Mr. H. C. Mulberger of the Laboratory who gave a very interesting address entitled "The Geiger Counter and Atomic Research".

To illustrate the lecture, an ingenious attaching of a Geiger Counter to a radio gave the large audience an opportunity to hear the counter as it reacts to various minerals. It is believed that this was the first attempt that such an experiment has been made.

Following some very pertinent remarks by Mr. Brown, he and Mr. Mulberger presented a large display of fluorescent materials under various lights. Mr. Mulberger also showed some of his movies.

After refreshments, the meeting was adjourned.

Ruth Wright, Sec.,
325 S. Weber
Colorado Springs, Colo.

Texas Mineral Society

The Texas Mineral Society meeting for February was held in the Baker Hotel in Dallas on the 8th of February.

Rev. Charles G. Kehler, director of the Fannin (Texas) County Lapidary School, spoke on his collecting in Canada and on the work his school is doing. The school is operated by the state of Texas for the handicapped citizens of Texas who want to learn the trade of silver-smithing or lapidary.

April Meeting

The Texas Mineral Society held their regular monthly meeting April 12th in the Baker Hotel in Dallas, Texas.

Mr. J. D. Churchill, one of the club's outstanding members, gave one of the most educational programs that the club has had the privilege of hearing and seeing. Mr. Churchill brought a small laboratory to the meeting with him and demonstrated how minerals are tested to ascertain what they are. Both blow-pipe and test-tube experiments were made to determine the contents of various minerals.

Tests were run on cinnabar, iron, maganese, calcite, copper and other minerals.

Ralph D. Churchill,
Secretary-Treasurer,
2003 Republic Bank Bldg.
Dallas, Texas.

Passaic County Gemological and Mineral Society

Regular monthly meeting of the Passaic County Gemological and Mineral Society, was held on April 5.

The lecture at this meeting was on Fluorescent Minerals. Fluorescent Minerals and Mineral Lamp were supplied by Mr. Howard J. Hewitt, who also gave the lecture.

The next meeting will be held May 3rd. At this meeting the Gemology of New Jersey will be the subject.

The Society meets at the Stewart Gem and Diamond Cutting 565 Main Ave., Passaic.

Joseph C. Hanzl, Secretary,
18 E. 2nd Street,
Clifton, N. J.

San Fernando Valley Mineral and Gem Society

San Fernando Valley Mineral & Gem Society, Inc., meet the 2nd Thursday, at 8 p.m. each month at Sepulveda Woman's Club 15236 Parthenia, Sepulveda, California. Visitors welcome. February meeting had as guest speaker Mr. Ray Willmoth, showing slides of trip thru Bryce & Zion Canyons & Crater Lake. January Field trip was in the Yermo Dist. and February trip will be in Kramer Hills Dist. The Annual Show will be held Saturday & Sunday, June 11-12 at Recreation Hall, in North Hollywood Park.

Agatha W. Lynn, Pub. Dir.
11704 La Maida St.,
N. Hollywood, Calif.

CALIFORNIA CONVENTION COMMENTS

One hundred years after the gold rush a new rush is about to converge on the Golden Empire. Sacramento is the magnet that will draw thousands to the big combined conventions of the American and California Federations of Mineralogical Societies to be held June 24, 25, and 26 1949.

Your Convention Committee has been informed by some of the societies that they will travel to the convention by caravan. If your society or group plan a caravan, please inform the convention committee, so that they may help you. Send them your plan of travel, your route, planned stops, dates, and all pertinent information. In this way they can cooperate with you in planing incoming as well as outgoing field trips, and supply you with any helpful information that they can obtain.

Detailed information concerning display cases and case lighting is being sent to the societies.

Bring lots of swapping material. A big free swapping area will be set up in a prominent place. There will be plenty of free space for all you swappers.

Western dress wil be in order --particularly 49'er garb. Remember our theme is the gold discovery centennial.
Do you know how to use a gold pan? ?
REMEMBER SACRAMENTO IN '49.

Leo G. Chaussee, Chairman
Publicity & Advertising

FEDERATION SPONSORS CONTEST

Youngsters will be awarded valuable prizes for original articles on mineralogy in the first of a series of contests sponsored by the American Federation of Mineralogical Societies.

The purpose of this contest, as announced, by Pres. Richard M. Pearl, is to encourage further activity in mineralogy among the youthful enthusiasts who will become the scientists, scholars, and citizens of the near future.

A $25 Savings Bond and a fine mineral specimen will be the first prize. Additional prizes will include specimens, equipment, and books appropriate to the interests of the winners.

The contest is open to boys and girls in the United States and Canada under twenty, who have not yet enrolled in a college or university. Original articles will be accepted on any subject connected with mineralogy.

Papers should be submitted before October 15 to Prof. Richard M. Pearl, Colorado College, Colorado Springs, Colo. The judging will be done by three professional men who are much concerned with earth science education. The Judges are Arthur L. Flagg of Phoenix, Ariz., Dr. Ben Hur Wilson of Joliet, Ill., and Orlin J. Bell of Oakland, Calf., who made the original suggestion for such a contest.

Los Angeles Lapidary Society

The 'JEEP-HERDERS' of the Los Angeles Lapidary Society put on an illustrated and humorous program at the Feb. meeting, showing the trials and trails of locating a new deposit of plume and moss agate, and then getting snowbound of all things in Southern California.

A new idea in a combination Lapidary show and rockhounds picnic will be held Sept. 24 and 25, 1949 at Montebello. This will be largest display of Lapidary Art, demonstrations of all methods used in Gem cutting and Jewelry making ever shown. All material and work done by the Society members. Everyone is welcome, Remember the date, Sept, 24 and 25.

J.E. Gaston, corr. sec'y.
3776 Dover Place
Los Angeles 26, Calif.

THE PROSPECTOR

By D. H. Bell

Give me the mountains
Where the canyons are steep.
Where the strata outcrops
And the cataracts leap.

Where the mineralized colors
Are varied and bright;
Where the crystals shine out
Like the stars in the night.

There, give me a hammer,
A cabin or hut,
For I'm a prospector
Most people call a "nut".

The Y E S page of the

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